FROM THE HOUSE of BELT
ON BOKES FOR TO RADE
I ME DELYTE - Chaucer

LEONARDO
DA VINCI
ON
PAINTING

A

TREATISE

OF

PAINTING;

BY

Leonardo da Vinci.

Tranſlated from

The Original *Italian*,

And adorn'd with a great Number of Cuts.

To which is prefix'd,

The AUTHOR'S LIFE;

Done from

The Laſt Edition of the *French*.

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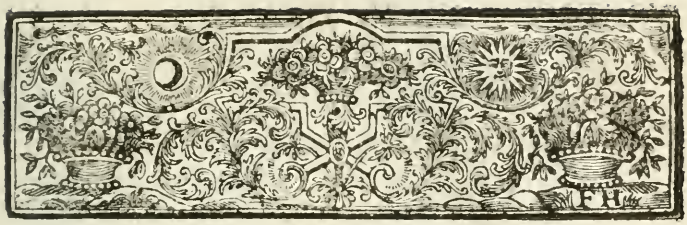

TO

Sir THOMAS HANMER, *Bar*.

SIR,

A Man of *Leonardo da Vinci*'s Character, can no where be so properly sheltered, as under a Man of *Yours*: That Merit which recommended him to the *World*, will be sure of making him acceptable to *You*; Nor can that Countenance, and Protection which you always vouchsafe

to the *Deſerving*, fail of being ſhewn to *Leonardo*.

On a Survey of the following Treatiſe, I cou'd ſee nothing wanting to make it popular, or to give it Credit in the World, but to appear under your Patronage: A Piece like *this*, Sir, cou'd not receive any New Advantage, excepting from a Name like *Yours*: 'Tis now, I think, compleat, and may venture abroad with Aſſurance; for who will queſtion the Merits of a Work, that has one of the greateſt *Genius*'s of a former Age, for its *Author*, and one of the beſt *Judges* of the Preſent Age for its *Patron*.

Leo-

Leonardo, I know, Sir, is no Stranger to You: The Wonders of his *Pencil* you are already acquainted with, (One of his Paintings being seen in your Noble Collection;) Pleaſe, now to caſt an Eye on thoſe of his *Pen*:' 'Twill be no diſagreeable Amuſement to compare them together; to ſet the *Theory* in oppoſition to the *Practice*; and to conſider thoſe admirable *Rules* in the One, which have had ſo happy an *Effect* in the other.

Our Author, I'm perſuaded, Sir, will give you *Pleaſure*, in Exchange for the *Reputation* you give him: 'Twas the Conſideration of this mutual Be-

nefit, that firſt determined me to offer him into your Hands: If I had any further View, it was only that of ſhowing the World, that I have the Honour to be, SIR,

Your moſt Humble and

Obedient Servant,

John Senex.

THE

Tranſlator's PREFACE.

LEONARDO DA VINCI *was a Man ſo happy in his Genius, ſo conſummate in his Profeſſion, ſo accompliſhed in the Arts, ſo knowing in the Sciences; and withal, ſo much eſteemed by the Age wherein he liv'd, his Works ſo highly applauded by the Ages which have ſucceeded, and his Name, and Memory ſtill preſerved with ſo much Veneration by the preſent Age: That, if any thing cou'd equal the Merit of the Man, it muſt be the Succeſs he met with.*

Scarce ever, perhaps, was there a Man of ſo extenſive, and yet of ſo accurate a Thought; who cou'd range o'er ſuch vaſt Fields of Science, and, at the ſame time, attend ſo cloſely, to the minuteſt Circumſtances: 'Tis this that ſeems to make up Leonardo's *Character; 'tis this that diſtinguiſhes him from the reſt of Mankind; and in this View, he ſtands, not only above the greateſt Painters, but on a level with the greateſt Men.*

'Tis not to beſpeak the Reader's Favour in behalf of the following Treatiſe, that we introduce it with an Elogy on its Author: On the contrary, the Merit of the Author, if need were, might be fairly argued from the excellency of the Treatiſe: And indeed, they are ſo well match'd, the one to the other, that, as Leonardo *cou'd not have written a leſs maſterly Piece, ſo, neither cou'd that have come from the Hands of a leſs able Maſter.*

A Man who compares the following Account of his Life, *with the* Work *to which it is prefix'd, will clear the Hiſtorian of all Flattery, or falſe Colouring: There being ſcarce any thing advanced in his Favour, in the former, but what ſeems authoriz'd by ſomething ſeen in the latter: ſo that theſe without any great Impropriety, may be ſaid to be Counter parts, to each other.*

How vaſt, how Immenſe an Art is Painting, as conſidered and handled by Leonardo! *Scarce any thing in the whole Syſtem of Nature, but comes within its Compaſs. Not the Minuteneſs of the ſmalleſt Things, not the Magnitude of the largeſt that ſecures them from its Cognizance! Nay, as if the various Appearances of the Material World, were too ſcanty, too limited a Sphere; it reaches out into the Intellectual World; takes in the Motions and Paſſions of the Human Soul;*

Soul; and by the Force of Light *and* Shadow, *makes the Operations of an incorporeal Agent, the visible Objects of a corporeal Organ.*

The Province of a Painter, as our Author has fix'd its Boundary, seems too wide and spacious to have been ever discharged in its full Extent, by any Man but himself. The Management of the Pencil, and the mixture of Colours, with the Knowledge of Perspective, and a habit of Designing, wherewith most Painters seem to content themselves, make but a part of the Art, as understood by Leonardo. *To these he calls in the Assistance of other Arts; Anatomy, Opticks, Meteorology, Mechanicks, &c. Searching attentively into the Powers of Nature, in order to form an Art that may imitate her; and from the Depths of Philosophy, drawing Means for the improvement of Painting.*

'Tis not in Painting alone, but in Philosophy too, that Leonardo *has surpassed all his Brethren of the Pencil; nor does it appear in the least improbable, but that 'twas his uncommon Skill in the latter, to which, in good Measure, he owed his surprizing Success in the former. The truth is, these are two Faculties, that may be nearer akin, than every one, perhaps, is aware of: Nor would there be any thing, methinks, very daring in the Assertion, shou'd I affirm, that Philosophy is absolutely necessary, by way of Preliminary to Painting.*

To

To Paint, 'tis allow'd is to imitate Nature: But, is not the Knowledge *of Nature, evidently requisite to the* Imitation *thereof? And, must it not be pleasant, to see Men about to represent Natural Objects, who are unacquainted with the Nature, and Properties of the Objects to be represented?* Quacks, *indeed, there may be in Painting, as well as in other Professions; but to become a* Regular *Painter, 'tis indispensibly necessary that a Man serve an Apprenticeship to Philosophy. We have People who pretend to cure Diseases, without knowing any thing of the Animal Oeconomy, or of the Powers of Medicines; and we have others, who wou'd be thought to Paint, by the mere Mechanism of a Hand, and a Pencil moving in this and that Direction: but, as the College will never allow the former to be Physicians; so, I see no reason why the latter shou'd be complemented with the Title of Painters.*

The Example, and Success of Leonardo, *cannot fail, sure, to animate our Painters to the Study of Philosophy, and Mathematicks. If their Great Master could turn the* old *Philosophy of his Age to so good an Account in Painting; what might not be expected from the System of Nature, as it stands under its present Improvements by the Moderns? We see what Laudable Uses he makes, even of a defective Doctrine of Light: To what a pitch wou'd he have carried his Art, had he been ac-*

quainted

quainted with the New, the Noble, the Newtonian *Theory of Light and Colours? what Improvements wou'd not he have made, had the Discoveries of a* Bacon, *or a* Boyle *been known in his Days, or had it been his Fortune to have lived in ours? I know not how our Painters will answer it, if their Art should seem to decline, at a time, when the Knowledge of Nature, and of* Geometry *which are the very Basis whereon it is built, is so wonderfully improved: But this I dare venture to pronounce, that they will never reach* Leonardo *in Painting, 'till they have first rival'd him in Philosophy.*

The Reader is not to expect, in the following Pages, to find, a just, a Methodical Institution of the Art of Painting: what he has to look for, is a noble Collection of useful Precepts, and curious Observations on the several Parts of that Art. Instead of treating us with a dry, an insipid System, dully drawn out into its Divisions and Subdivisions, our Author hospitably leads us into his Closet, sets before us, the finest, and most valuable parts of his Knowledge, and entertains us with the precious Fruits, of all his Labours, his hard Studies, and long Experience. 'Twas not for a Man of his Genius to stoop to the A B C *of his Art; to take the Raw Pupil into his Tutorage, and to lead him step by step, from Stage to Stage; that were the proper Province of some heavy Pedant,*

dant, and cou'd never suit with a Man of Leonardo's *Mercury. Yet does he not leave the Young Painter absolutely at large, or abandon him entirely to the Mercy of his Stars; but wanting Leisure to attend him, himself, he very civilly gives him Directions for his Conduct: Thus, at the Beginning of his Work, we find him instructing the Novice in a method of Study, chalking out the Course he is to steer, and pointing out the several Dangers to be avoided.*

If any Objections lie against Leonardo's *Performance, they must be drawn, either from the looseness, and inaccuracy of his Stile, or the want of Order, and Connection in his Periods: Both of which, are not only, easily accounted for, but, all things considered, easily excused too. For the Treatise, 'tis own'd, never had the finishing Hand of its Author; and though he might intend it for the Press, 'tis evident, that it was never prepared for it. So that we have here, the Elements of a Work, not the Work it self, mature, and finish'd; We have the Matter, but the Form is wanting.* Leonardo, *we are assur'd, knew, too well, the Powers of Symmetry, and Proportion, to have sent any thing into the World that might appear disorderly and indigested: Nor will his Talent at Stile and Elocution admit of the least Dispute: I'm much mistaken in the Man, if he cou'd not have written as correctly*

rectly as he painted; and have ſtruck the Imagination as warmly with his Pen, as his Pencil: 'But when a Man conſiders that buſy Scene of Life wherein he acted; that amazing variety of Studies, and Exerciſes which he went through, and of Undertakings that he atchiev'd, 'tis ſo far from being ſtrange, methinks, that his Writings are not elaborate and finiſh'd; that, 'tis next to a Miracle he ſhould ever have written at all.

In the Original of the following Treatiſe, it muſt be own'd there are ſome things ſo very dubious, and obſcure, that a Man who reads it, finds Occaſion for his gueſſing Faculty, oftner than he wou'd wiſh. 'But this is not all; for in ſome places, 'tis not bare Obſcurity, but mere Midnight Darkneſs: The Stile, which at beſt is very negligent, is ſometimes ſcarce conſiſtent: So that one wou'd be tempted to think, that the Author, were ſometimes, writing for his own ſake, rather than that of the World; and that he were taking down looſe Notes to eaſe his own Memory, rather than writing a juſt Treatiſe for the uſe of the Publick.

As to the want of Method, which makes the other Objection againſt the Work, though it flows from the ſame Source with the want of Stile, yet is it more eaſily forgiven: For this, brings ſomewhat of Merit along with it, to compenſate for its Failure. Thus, If we have not a juſt

Order,

Order, and a ſtrict Chain running through the Work; neither are we troubled with thoſe Dull, thoſe Formal Tranſitions, which in that caſe wou'd be unavoidable: If we loſe ſomewhat, by having things of like kind disjoyn'd, and promiſcuouſly intermingled with others, to which they bear no relation, yet we are gainers in another ſenſe; ſince, the Scene, by this Means being often, and unexpectedly ſhifted, we are agreeably amuſed, our Attention is kept alive, and we are ſecured from ſinking into that Dullneſs, and Indolence, to which a more formal, more Methodical Induction wou'd be apt to betray us. The Proſpect, here, never palls upon the Eye; 'tis ever new, ever changing: no ſooner is its Novelty gone, and the Edge of the Curioſity taken off, but it vaniſhes, and the Mind is opportunely relieved, with the Appearance of a new One.

Again, If we conſider the Age wherein the Author wrote, we ſhall find our ſelves furniſh'd with one further Argument, in favour of his want of Method: For, as the Work now ſtands, looſe, and unconnected; ſuch of the Obſolete Dogmata *of thoſe Days, as occur, lie entirely at the Readers Mercy, and may be thrown by, and paſſed over, without the leaſt Damage to the reſt of the Work: Whereas, had the whole been woven into a Regular Syſtem, there had been no taking out, without*

out

out tearing; the drawing of a few Threads, *would not only have disfigured the Rest, but have even endangered the unraveling of the whole* Piece. *'Tis for this Reason perhaps, that my Lord* Bacon's Silva Silvarum, *which is written perfectly in* Leonardo's *manner, continues still in Use and Esteem; while the more Methodical Productions of most of our System-Mongers, are become antiquated and out of Date.*

Having said thus much concerning my Author, and his Work, the Reader will now give me leave to put in a Word concerning my self, and my Performance. The Brevity, and Abruptness of the Original, made a strict Translation altogether unadviseable; it being frequently impossible to express the Author's Meaning, in any tolerable English, *without the help of a little Periphrasis. That, however, is a Liberty which I have never taken, but on the most urgent Occasions; nor even then, but with as much Moderation as might be. My Predecessor, Monsr.* Chambrè, *the applauded Author of the* French *Translation has taken the same Measures; I wish it may only prove with the same success. That Gentleman's Performance, I must own, indeed, to be masterly, beyond most Translations I have seen; and yet with all its Virtues, it cannot be denied but that it has its Failings, too. In the Course of my Translation, I found my self, pretty frequently under a Necessity of dissenting from*

from him, and of putting Constructions on my Author, very different from what I found in his Version. But, Mistakes of this kind, ought, perhaps, to be laid at the Printer's, or the Publisher's Door, rather than at his; it appearing in no wise probable, that those happy Turns which are seen in some Places, and those glaring Oversights which appear in others, shou'd come from the same Hand. As to the Figures, a bare Out-line, *we thought sufficient for the Purpose: To have given finished Designs, wou'd have added considerably to the Price of the Book, without any Addition to its real Value; these being in no wise necessary, excepting where the* Relievo *of a Body, the Diminution of a Colour, or the Quality of Stuffs in a Drapery, are concerned; and on those Occasions we have never failed to make use of them. Instead of dividing the Book into Chapters, and prefixing Titles to each, as they stood in the former Editions, it has been thought proper, barely to throw the Work into distinct Paragraphs, and to affix the subject Matter on the Margin: for, in the former Case, besides that the Course of the Reading was too much interrupted; the shortness of the Chapters, and the length of the Titles, would have proved matter of Raillery to some Readers; who might have been scandalized to see the* Head, *sometimes, as big as the* Body.

THE

THE

LIFE

OF

LEONARDO DA VINCI.

Leonardo da Vinci was born in the Caſtle of *Vinci*, ſituate in the Valley of *Arno*, a little below *Florence*. His Father was *Pietro da Vinci*, a Man of a very narrow Fortune; who having obſerved his Son's Inclination to Painting, by ſeveral little Draughts, and Sketches which he made while he was a Child, reſolved to give him what further helps he was capable of. With this view he carried him to *Florence*, where he placed him under the care of his Friend *Andrew Verocchio*, a Painter, of ſome Reputation in that City. *Andrew* already ſaw ſomething very ex-

traordinary in the young Man, and was engaged to be careful of his Education, not only by the Friendſhip which he owed his Father, but by the ſweetneſs and vivacity which appeared in the Son. Here *Leonardo* found wherewithal to ſatisfie the ſtrong propenſity which he bore to all the Arts that depend upon Drawing; for his Maſter was not only a Painter, but an Engraver, Architect, Carver, and Goldſmith: and ſo great a Proficient did the young *Leonardo* become, that in a little time he exceeded *Verocchio* himſelf.

This was firſt diſcovered in a Painting of our Saviours Baptiſm, which *Andrew* had undertaken for the Religious of *Valombroſa*, without *Florence*. He would needs have his Pupil aſſiſt in the Performance, and gave him the Figure of an Angel, holding ſome Drapery to Paint: But he ſoon repented his forwardneſs, for *Leonardo*'s Angel proved the fineſt Figure in the Piece, and viſibly diſcredited all the reſt. *Andrew* was ſo deeply mortified on this occaſion, that he took his leave of Painting; and from that time, never meddled with Palet or Pencil more.

Leonardo thought now, that he needed not a Maſter, and accordingly quitting *Verocchio*, he goes to work by himſelf. Several Paintings which he made about this time,

time, are ſtill to be ſeen in *Florence*. He likewiſe Painted a Carton, for the King of *Portugal*, wherein *Adam* and *Eve* were repreſented in the Garden. This was a finiſh'd Piece, the two Capital Figures were extremely Graceful, the Landskip full of Beauty, and the very Shrubs and Fruit were touch'd with Incredible exactneſs. At his Father's requeſt, he made a Painting for one of his old Neighbours at *Vinci*; it conſiſted wholly of ſuch Animals as we have naturally an averſion to, and theſe he joyn'd ſo artfully together, and diſpoſed in ſuch humorous attitudes, that like *Meduſa*'s Head, it ſtruck thoſe who ſaw it with horror and amazement. His Father eaſily perceiving that this was not a Preſent for a Country Farmer, ſold it to ſome Merchants: of whom it was afterwards bought by the Duke of *Milan*, for three Hundred Florins.

He afterwards Painted two very valuable Pieces; in the one was repreſented our Lady, and beſides her, a Veſſel of Water, with Flowers ſtanding out of it: In this he ſhowed a great deal of addreſs, the Light reflected from the Flowers, being made to throw a Pale redneſs upon the Water. This has been ſince in the Poſſeſſion of Pope *Clement* the Seventh.

The other was a deſign which he made for his Friend *Antonio Segni*. In it he

had repreſented *Neptune*, in his Carr, drawn by Sea-Horſes, and attended by Tritons and Sea Gods; the Heavens appeared overſpread with Clouds, which were driven to all Parts, by the violence of the Winds; the Waves were ſeen to Roll, and the whole Ocean appeared in an uproar.

This Piece was perfectly in the Character and manner of *Leonardo*; for his Genius was vaſt, and his Imagination lively; and though he knew that a juſt Proportion, was the Source whence all real Beauty proceeded, yet was he to a Degree fond of any thing whimſical or uncommon; inſomuch, that if he chanced to meet a Man with any thing odd or ridiculous in his Perſon, he would not fail to follow him, till having view'd the object with attention, and fix'd the Idea in his Mind, he cou'd make a Draught of it at his own Lodgings. *Paul Lomazzo* in his Treatiſe of Painting, aſſures us, that *Aurelo Lovino* had a Book of Draughts, wholly performed by *Leonardo*, in this kind: one may judge of his Talent this way, by a Painting ſtill to be ſeen in the Palace Royal at *Paris*. The Figures are two Horſemen engaged in Fight, and ſtrugling to tear a Flag from each other. Rage and Fury are ſo admirably expreſs'd, in the Faces of the two Warriors, their Air appears ſo wild, and the Drapery is thrown into

into ſo unuſual, tho' at the ſame time ſo agreeable a Diſorder, that a Perſon who looks on them, is ſtruck with horror, and tickled into Laughter, at the ſame time. I paſs over a *Meduſa*'s Head which he Painted; and another Piece repreſenting the *Magi* doing Hommage; though there are ſome fine Heads in the latter: But his Fancy being extremely brisk and volatile, he left both theſe, and ſeveral others of his Works unfiniſh'd: Beſides, he had ſo awful an Idea of Painting, and his Knowledge in each Part of it was ſo Conſummate; that with all his Fire and Vivacity, he needed a great deal of Time to finiſh what he had begun.

Never was Painter more knowing in the Theory of his Art, than *Leonardo*. He was well skill'd in Anatomy, a Maſter in Opticks, and Geometry, and apply'd himſelf to the Study of Nature and her Operations, both on Earth, and in the Heavens, with wonderful Alacrity. So many different Studies and ſuch variety of Reflections, as they preſent, furniſhed him with all the Knowledge which a Painter could wiſh for, and rendered him the ableſt Perſon that his Profeſſion has ever known.

However his Studies did not terminate here, but having an Univerſal Genius, and a Taſte for all the Polite Arts, he apply'd

himſelf to them all, and excell'd in every one. He was a good Architect, an able Carver, and extremely well Verſed in the Mechanicks. He had a fine Voice, underſtood Muſick well, Sung to a Miracle, and play'd better than any Muſician of his time. Had he lived in the Fabulous Ages, the *Greeks* wou'd doubtleſs have made him the Son of *Apollo*; and wou'd have been the more confirm'd in their Opinion, in that the ſame Inſpiration which made him a Painter and Muſician, made him a Poet too; and that the ſeveral Talents which are ſhared among the Sons and Diſciples of that God, were all united in him. The following *Sonnetto* is all that is left us, of his Poetry:

Sonnetto Morale.

Chi non puo quel che vuol, quel che può voglia,
Che quel che non ſi può folle è volere.
Adunque ſaggio è l'Huomo da tenere,
Che da quel che non può ſuo voler toglia.

Pero ch' ogni diletto noſtro e doglia
Sta Inſi e no Saper voler potere,
Adunque quel ſol può che co'l douere
Ne trahe la Ragion fuor di ſua ſoglia.

Ne sempre è da voler quel che l'Huomo puote,
Spesso par dolce quel che torna Amaro.
Pianfi già quel ch'io volsi poi ch'io l'hebbi.

Adunque tu, Lettor, di queste Note,
S'a te vuoi esser buono, e a gl' altri caro,
Vogli Semper poter quel che tu debbi.

It was surprizing to see *Leonardo* take so much Pleasure in Exercises, that appeared absolutely foreign to his Profession. He was very Skilful in the management of a Horse, and took delight in appearing well Mounted. He handled his Arms with great Dexterity; and for Meen and Grace, might contend with any Cavalier of his time. his Behaviour was perfectly Polite, his Conversation Charming, and his Speech agreeable. so many extraordinary Qualities meeting together, render'd him the most accomplish'd Person of the Age he liv'd in: His Company was coveted by all that knew him; and no Man ever enjoy'd it without Pleasure, or left it without regret.

His Time being shared in so many several Exercises, may be one Reason why so many of his Works are left unfinished; and in all probability has contributed as much thereto, as the quickness of his Fancy, which glanced lightly from one thing to another; or even as his Ability it self, which wou'd never suffer him to take up with any thing that was indifferent.

Leonardo's Reputation soon spread it self over all *Italy*, where he began to be known for the first Man of the Age in all the Polite Arts. *Lewis Sforza*, Sirnamed the Moor, Duke of *Milan*, called him to his Court, and appointed him a Pension of five Hundred Crowns. This Prince having immediately before, establish'd an Academy for Architecture, prevailed with *Leonardo* to enter himself as a Member. This proved the greatest Service to the Company that the Duke could possibly have done: *Leonardo* was no sooner enter'd than he banish'd all the old Gothick Fashions, which the former Academy establish'd under *Michelino*, above an Hundred years before, had still preserv'd; and reduc'd every thing to the happy Simplicity and Purity of the Ancient *Greeks* and *Romans*.

About this time, Duke *Lewis* formed a Design of supplying the City of *Milan* with Water, by a new Canal. The execution of this Project was deputed to *Leonardo*, and he acquitted himself of the trust, in a manner that surpass'd all Expectation. The Canal goes by the name of *Mortesana*; being extended in Length, above two Hundred Miles: and navigable throughout, it passes through the *Valteline* and the Valley of *Chiavenna*, conducting the Waters of the River *Adda*, to the very Walls of *Milan*; and enriching both the City

ty and the adjacent Campaign, by its communication with the *Po* and the Sea. This was a Noble and a difficult Enterprize, every way worthy of *Leonardo*'s Genius. He had here several Difficulties to grapple with, much beyond what had been met with, in digging the Ancient Canal, which conveys the Waters of the *Tesino* to the other side of the City, and which had been made above two Hundred Years before, while *Milan* was a Republick. But *Leonardo* Surmounted all Opposition, he happily atchieved what some may think Miraculous: rendering Hills and Valleys Navigable with security.

In Order to accomplish his Design, he retired to a Seat of his Friend Sig. *Malzi*'s at *Vaverola*. He there spent several Years in the Study of *Philosophy* and *Mathematicks*; applying himself with double Ardour to those Parts that might give him Light into the Work he had Undertaken. To the Study of *Philosophy*, he joyn'd the Searches of Antiquity and History; and by the Way, Observed how the *Ptolomys* had conducted the Waters of the *Nile* through several Parts of *Egypt*; and in what Manner *Trajan* had opened a Commerce with *Nicomedia*, by rendering Navigable the Lakes and Rivers lying between that City and the Sea.

After

After *Leonardo* had been Labouring for the Service of *Milan* in Quality of *Architect* and *Engineer*; he was called by the Dukes order, to Adorn and Beautify it with his Paintings. That Prince appointed him to Paint our Lord's Supper, for the Refectory of the *Dominicans* of St. *Maria delle Gratie*. *Leonardo* surpass'd himself, in this Performance. All the Beauties of his Art are here shewn in a Manner perfectly surprizing. The Design, is Grand, but Correct; the Expression Noble; the Colouring, Charming; and the Heads admirably well varied. There was a Majesty and Sweetness in each of the Apostles Faces; but beyond the rest, in those of the two St. *James*'s: That of our Saviour was never finished; *Leonardo* despairing to express the Idea he had conceived of a GOD Incarnate; or even to reach a more exalted Beauty than he had bestowed on some of his Followers. While *Leonardo* was employ'd in this Piece, the Prior of the Convent, thinking his Progress too Slow, wou'd be often importuning him to Dispatch; but all his Solicitations proving vain, he at length had the Assurance to carry his Complaints to the Duke; upon this *Leonardo* is sent for, and being examin'd about the Painting, he assured his Highness that there were but two Faces wanting to Compleat the Piece; the one being

ing our Saviour's, and the other that of *Judas*: As to the former he own'd himſelf unable to finiſh it; being at a loſs how to Paint the Majeſty and Beauty of ſo amiable and Auguſt a Perſonage. But promiſed very ſpeedily to Compleat the Latter; ſince to draw the Avarice and Ingratitude of *Judas*, he needed nothing but to Repreſent the Prior of the Dominicans, who had ſo baſely rewarded him for all the Pains he had taken.

This Work has always been eſteemed *Leonardo*'s Maſter-Piece. It was accommodated to that Part of the Hiſtory wherein our Saviour declared to his Apoſtles that one of them ſhould betray him. The Sentiments which ought to ariſe in the breaſts of his Diſciples are finely repreſented: The Expreſſions of Grief, Fear, Suſpicion, Inquietude, and Love, are admirable. *Judas* bears all the Marks of a Traytor and a Villain; the Treachery that lurks in his breaſt ſits confeſs'd in his Face, and the firſt Glance of the Eye ſingles him out from the reſt. *Leonardo* has here ſhown that he perfectly underſtood the Motions of the Soul, knew what Effects they have upon the Body, and was able to Expreſs them in all their Force and Energy upon the Face. In this Part of Painting indeed he was Inimitable; and not only excell'd all the World, but himſelf too.

Francis

Francis the First, was so charmed with this Piece when he saw it at *Milan*, that he was not satisfied till he had tried all means possible, for its Removal into *France*. In the end however, this was found Impracticable, the History being Painted on a thick Wall, and taking up no less than thirty Square Feet in Area. The Copy of this Painting now to be seen at St. *Germains*, was made by order of the said *Francis* the First; who finding the Original out of his reach, resolv'd to have something as like it as he could get. There is another Copy of it in large, made by *Lomazzo*, one of *Leonardo*'s Pupils, and still preserved in the Church of St. *Barnabas* at *Milan*. From these two Copies, the curious may Form some Idea of the Beauties of the Original, which is now utterly defaced. For *Leonardo* having Painted it in Oil, and upon a Wall not sufficiently secured from Moisture; the Dampness of the Place has mix'd it self with the Colours, and diluted them to that Degree, that the Wall is now reduc'd to its primitive nakedness. In the same Refectory of the Dominicans, may be seen another Piece of *Leonardo*'s, representing Duke *Lewis*, and *Beatrix* his Dutchess; both upon their Knees. On the one side of them appear their Children; and on the other

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a Crucifix. About the ſame time he likewiſe Painted our Lord's Nativity for the Duke: which laſt Piece is now preſerved in the Emperor's Cabinet.

Leonardo's skill in Anatomy proved of infinite ſervice to him: this enabled him to give a peculiar force to his Figures, and to diſtinguiſh them by their ſtrength, from thoſe of any other Maſter. This he ſeem'd ſenſible of, and accordingly took all Opportunities of improving it. He held frequent Conferences on the Subject with *Anthony de Tour*, Anatomy Profeſſor at *Pavia*: and made abundance of Draughts from the Life, many of which have been ſince Collected into a Book by his Scholar, *Francis Melzi*. He drew a Book of Combats for the Uſe of his Friend Sig. *Borromee*, Maſter of Arms; in which were repreſented all the ſeveral Kinds of Engagements both on Horſe-back and on Foot. He likewiſe compoſed ſeveral Treaties for the Uſe of the Painters of the new Academy; of which he had ſometime before been Choſen Director, and which through his Extraordinary Care and Conduct, was now in a very flouriſhing Condition. After *Leonardo's* Death, his Writings lay a long Time at *Vaverola* in the Hands of Sig. *Melzi*; till at length being freed from their

their obſcurity, it was their Fate, to be diſpers'd to different Parts; as we ſhall hereafter have occaſion to obſerve.

Leonardo frequently retired to *Vaverola* for the Conveniency of his ſtudies. He there found himſelf perfectly at eaſe; his Repoſe being neither interrupted by the Viſits of his Friends, nor the Cares of the Academy; and it was in this Retreat that he Compos'd the greateſt part of his Works. But the Wars of *Italy* began now to break in upon his quiet: he found his Patron the Duke engaged in an unhapyy War, and not only the Academy but even the State in Danger. The Event proved altogether as Melancholly as the Preſage had been: Duke *Lewis* was Defeated, taken Priſoner, and Carried into *France*, where he died in the Caſtle of *Loches*. The Accademy in fine, was deſtroy'd, the Profeſſors turned adrift, and the Arts effectually baniſhed out of *Milan*.

Italy however, prov'd a gainer by theſe Misfortunes of the *Milaneſe*; for *Leonardo*'s School being now broken up, the Scholars ſpread themſelves over the whole Country. Several of them were Perſons of Extraordinary Abilities, and knew how to imitate their Maſter ſo well, that People of moderate Judgement have been ſometimes at a loſs to diſtinguiſh the Copy from the Original.

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He had made Painters, Carvers, Architects, Founders, and Engravers in Criſtal and Precious Stones. Out of his School came *Francis Melzi*, *Ceſar Seſto*, *Bernard Lovino*, *Andrew Salaino*, *Mark Uggioni*, *Anthony Boltraffio*, *Gobbo* an Extraordinary Painter and Carver, *Annibal Fontana* a worker in Marble and Precious Stones, *Bernazzano* an excellent Painter of Landskips, *Paul Lomazzo*, and ſeveral others. *Seſto* and *Lovino*, were thoſe who have had the greateſt Reputation; but *Lomazzo* wou'd have ſurpaſs'd them both, had he not unhappily loſt his ſight in the very flower of his Age: Being thus diſabled for the Practice of Painting, he applyed himſelf to it in Speculation; and while he was blind, wrote ſeveral Treatiſes, admired by the moſt clear ſighted: always appealing to *Leonardo* as a Standard, and Recommending him to all who wou'd Excel in Painting, as a compleat Model for their Imitation.

In 1499, which was the Year before Duke *Lewis*'s Defeat, *Leonardo* being at *Milan*, was deſired by the Principals of the Place to contrive ſome new Device for the Entertainment of *Lewis* the 12th of *France*, who was then juſt ready to make his Entry through that City. *Leonardo* conſented, and accordingly made a very Curious *Automata*: It was the Figure of

of a Lion, whoſe Inſide was ſo well furniſh-ed with Machinery, that it March'd out to meet the King, made a ſtand when it came before him, rear'd up on its hinder Legs,and opening its Breaſt, preſented aScutcheon with *Flower de Luces* quartered on it. *Lomazzo* is Miſtaken when he ſays that this*Machine* was made for *Francis* the Firſt, that Prince having never been at *Milan*, till the Year 1515. at which Time *Leonardo* was at *Rome*.

The Diſorders of *Lombardy*, and the misfortunes of his antient Patrons the *Sforzi*, obliging *Leonardo* to quit *Milan*, he retired to *Florence*. That City enjoy'd all the Calmneſs and Tranquillity neceſſary for the Polite Arts to Flouriſh under. The Maginificence of the *Medici*, and the good taſte of the principal Inhabitants were powerful attractives, and prevailed more upon *Leonardo* to ſettle there, than the Love he bore to it as the Place of his Nativity. The firſt thing he undertook here, was the deſign of an Altar-piece for the Annunciate: In this he repreſented the little *Jeſus* with his Mother, St. *Anne*, and St. *John*. *Leonardo* rendered himſelf extreamly Popular among his Countrymen by this performance, which was ſeen and applauded by the whole City: Some Years after this, he carried it with him into *France*, where

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at the Desire of *Francis* the First, he put it in Colours. But the Piece he took the greatest Pleasure in, and on which he bestowed the most Pains, was the Picture of *Lisa* commonly call'd *la Joconde*. This was a Divine Piece; *Francis* the First was so charmed with it, that he purchased it at the price of 4000 Crowns; and it is still to be seen in his Successor's Cabinet. This work cost *Leonardo* Four entire Years, and yet after all, is said to have been left unfinished While he was employ'd in Painting this Lady, he had Musicians constantly attending; always Playing upon Instruments, or Singing with their Voices to divert her, and to prevent her from shewing a certain Indolence and Melancholly, which People out of Action are extreamly liable to. *Leonardo* about the same Time Painted two other very Valuable Pictures; The one a Nobleman of *Mantua*, and the other a Daughter of *Americus Benci*, much admired in those Days for her Incomparable Beauty. Nor must we omit a *Flora* which he finished about this Time, and which is still to be seen in *Paris*: The Figure has an uncommon Grace and Sweetness in its Air; and might have been reckon'd a Master-Piece, had it come from any other Hand than *Leonardo's*.

In the Year 1503. The *Florentines* Reſolving to have their Council Chamber Painted, *Leonardo*, by a Publick Decree, was elected to that Office. He had already made a conſiderable progreſs in one ſide of the Chamber, when he had the mortification to find that his Colours did not ſtick, but that as faſt as they dry'd they looſen'd from the Wall. *Michael Angelo*, in concurrence with *Leonardo*, painted another ſide of the Room; *Michael* tho' he was but a young Man, yet was he become a very able Painter; and had already acquired a mighty Reputation: In ſomuch that at 29 Years of Age he was not affraid to vie with *Vinci* who was 60. Each had his Friends and Partizans, who far from bringing them to a better Underſtanding, help'd the more to imbitter them againſt each other; ſo that *Michael* and *Leonardo* commenc'd open Enemies.

About this time *Raphael* coming freſh out of *Perugino*'s School, was led by *Leonardo*'s Reputation to *Florence*; the firſt view of *Vinci*'s Works ſtruck him with Aſtoniſhment, and wrought a Reformation in him, to which all the Glory he has ſince acquir'd, may juſtly be aſcribed. He began now to look upon the dry, harſh manner of his old Maſter *Perugino* with Contempt; and to ſet before him the Tenderneſs and Delicacy of *Leonardo* for his Imitation; and with

with ſuch Incredible Vigour, as well as Succeſs, did he follow his new Maſter; that he arriv'd by degrees at the utmoſt Pinnacle of his Art; and to this day, for the ſoftneſs and ſweetneſs of his Figures, reigns abſolute and without a Rival.

Leonardo kept cloſe at *Florence*, till the Year 1513. The moſt conſiderable of his Works at that time, were a Piece repreſenting the Virgin, with her little Son; and a Baptiſt's Head: the one now in the Hands of the *Botti*; and the other in thoſe of *Camillo Albizzi*.

Leonardo having never yet ſeen *Rome*, reſolv'd now to make the Tour of that City. The Exaltation of *Leo* X. to the *Pontificat*, gave him an Occaſion of paying his Reſpects to the new Pope; and he had there met with a Countenance and Eſteem ſuitable to his Merit, but for an unlucky Adventure. *Leo*, who had an Hereditary Love for Painting, and the Polite Arts, reſolv'd to employ him: *Leonardo* hereupon ſets himſelf to the Diſtilling of Oils, and the preparing of Varniſh, to cover his Paintings withal; of which the Pope being Inform'd, ſaid pertly enough, that he cou'd expect nothing from a Man who thought of Finiſhing his Works before he had begun them. *Vaſari*, a Zealous Adherent to *Michael Angelo*, aſſures us, that *Leonardo* met with many other

Mortifications while he was at *Rome*; and relates some other little Stories of him, which are the less to be Credited, because they appear infinitely beneath a Person of *Leonardo*'s Genius, and were never told but by a Profess'd Enemy.

Leonardo soon grew weary of *Rome*, and having an Invitation from *Francis* the First, he removed into *France*. He was above Seventy Years old when he undertook this Voyage; but the Honour of serving so great a King, supported him and seem'd to give him new Strength. In effect, the *French* prov'd as Favourable to him, as the *Romans* had been Injurious; and he found enough in the Goodness of King *Francis*, to make him amends for any affronts he had met with at *Rome*. The Court was at *Fontainebleau*, when *Leonardo* first presented himself before the King. *Francis* receiv'd him in the most affectionate manner, and shew'd him all the Marks of Esteem and Veneration which he cou'd any way Express. He was highly pleas'd to find the first Painter in the World at his Court, tho' by reason of his Age, he had but little to expect from him. The Fatigues of his Voyage, and the Change of the Climate, in all probability, contributed to the Distemper of which he died. He languish'd several Months at *Fontainebleau*; during which time, the King went frequently

quently to see him. This Prince making him a Visit one day, *Leonardo* to show his sense of the Favour, rais'd himself on his Bed; at that Instant he was seiz'd with a Fainting Fit, and *Francis* stooping to support him, he Expir'd in the Monarchs Arms.

Leonardo died at the Age of Seventy five Years, extremely Regretted by all who loved the Polite Arts, and Honour'd with the Friendship and Esteem of a mighty King. Nature perhaps never was more lavish, than in the Composure of this great Man, for she gave him even all that she had. He was extremely Handsom, and well Shaped, his Strength was surprizing, and he acquitted himself with uncommon Applause in all Exercises of the Body. But the Talents of his Mind were still more extraordinary than those of his Person: He join'd to a Polite Behaviour, the greatest Strength and Elevation of Mind: A surprizing Vivacity, to an unwearied Application to Study: a good Stock of Learning, to a pleasing Conversation. He refrain'd from Marriage, that he might work with the more Freedom; on which Occasion one of his Friends said, that *Leonardo* wou'd marry no Mistress but Painting, nor Beget any Children but the Works he perform'd. In his Riper years, he in-

dulged a Philoſophical Negligence, letting his Hair and his Beard grow; inſomuch, that at length he appear'd like an Ancient Druid, or a Modern Religious in a Deſart.

Some of *Leonardo*'s Paintings are to be ſeen in *England* and other Countries, but the greateſt part of them are in *Florence* and *France*. Beſides thoſe we have mentioned, *Lomazzo* Informs us, that he Painted the Conception of the Bleſſed *Virgin*, for the Church of St. *Francis* at *Milan*. There are ſeveral other Pieces in *Paris* that are known aſſuredly to be his; as the Holy *Virgin* ſitting in St. *Ann*'s Lap, and holding her little Son. An *Herodiade* of Exquiſite Beauty, ſometime in the Cardinal *de Richlieu*'s Poſſeſſion. Another *Virgin* with her Son. St. *John* and an Angel, a very valuable Piece. St. *John* in the Wilderneſs. A *Virgin*, much eſteem'd, heretofore in the hands of the Marquis *de Sourdis*. M. *de Charmois* Secretary to the Duke of *Schomberg*, had another very noble Piece of *Leonardo*'s, repreſenting *Joſeph* ſtruggling to diſingage himſelf from *Potipher*'s Wife; the ſweetneſs and modeſty of the one, and the Beautiful aſſurance of the other, were admirably expreſs'd, and rais'd all thoſe different Emotions in the Mind, which a view of the real Tranſaction would have done.

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As to the Diſcourſes *Leonardo* had Compos'd, and the Draughts he had made, thoſe into whoſe Hands they are fallen, preferring their private Intereſts before thoſe of the Publick, ſtill keep them in Obſcurity. After *Leonardo's* death they were digeſted into Thirteen Volumes, all Written backwards, after the *Hebrew* manner, and in ſo very ſmall a Character, that the naked Eye was at a loſs to diſtinguiſh one Letter from another. A contrivance without doubt of the Author to ſecure them from becoming too common! The Fate of theſe precious Remains has been as follows.

Lelio Gavardi d' Aſola, Provoſt of St. *Zeno* in *Pavia*, and a near Relation of *Aldus Manutius*, had the care of Inſtructing *Meſs. Melzi* in the Sciences: this gave him frequent Occaſions of going to their Country Seat at *Vaverola*, where the foreſaid Thirteen Volumes of *Leonardo's* Works were preſerv'd. *Gavardi* ſpying the Books, begg'd them of his Pupils, obtain'd his Requeſt, and carried them with him to *Florence*, hoping to make a round Sum of Money, by ſelling them to the great Duke. He was diſappointed however, for he found the Duke on his Death Bed when he arriv'd there. Upon this he leaves *Florence*, and betakes himſelf to *Piſa*. It was there his Fortune to meet with *Ambroſe Mazzenta*,

a Gentleman of *Milan*; who Expoſtulating the caſe with him, laid before him the baſeneſs of taking the Papers out of the *Melzi*'s hands, who knew ſo little of their Value. *Gavardi* was ſo touch'd with what he heard, that without more ado, he returns the Books to *Horatio Melzi*, then Head of that Family; and *Horatio* to reward the Care and Friendſhip which *Mazzenta* had ſhown, in procuring their Reſtitution, gives them back to *Mazzenta*. This Gentleman taking all Occaſions of Extolling *Horatio*'s bounty, and expreſſing his own Gratitude, the matter came at length to the Ear of *Pompeio Leoni*, Statuary to the King of *Spain*. *Melzi* was ſoon made to know the Value of the Papers he had ſo frankly given away; and being promiſed a conſiderable Poſt in the *Milaneze*, if he would recover them from *Mazzenta*, and Preſent them to the King of *Spain*, he hies to *Milan*; where by much Entreaty, he prevailed ſo far upon *Mazzenta*, that Seven of the Thirteen Volumes were delivered him back again. Of the remaining Six, Cardinal *Borromeo* had one, now in the *Ambroſian* Library; *Ambroſe Figgini* had another, ſince deſcended to his Heir *Hercules Bianchi*; the Duke of *Savoy*, *Charles Emanuel* had a Third; and the other Three, fell to *Pompeio Leoni*, and have been ſince

Sold

Sold by his Heir *Cleodore Calchi*, to Sig. *Galeas Lonato*.

Leonardo's Papers conſiſted of Draughts and Diſcourſes; the latter, ſo many of them at leaſt, as we have any Knowledge of, are as follows.

A Treatiſe of the Nature *Equilibrium* and Motion of Water. This Work contains many Draughts of Machines for conveying, raiſing, and ſupporting of Water; being written on occaſion of the Aqueduct at *Morteſana*.

A Treatiſe of *Anatomy*, already mention'd. This Work was likewiſe embelliſhed with a great number of Draughts, all carefully done after the Life.

The Anatomy of a Horſe, mention'd by *Vaſari*, *Borghini*, and *Lomazzo*. The Author had a peculiar Talent at drawing of thoſe Animals; and deſign'd this Treatiſe for the uſe of thoſe, who Paint Battles or Triumphs.

A Treatiſe of Perſpective, divided into ſeveral Books. *Leonardo*, in this Piece, delivers the Method of drawing Figures larger than the Life, ſo much commended by *Lomazzo*, Chap. iv.

A Treatiſe of Light and Shadows, now in the *Ambroſian* Library at *Milan*. It is

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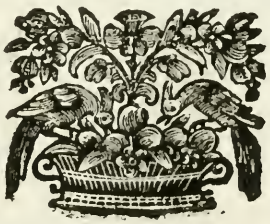
in a *Folio* Volume, covered with red Vellom, and was presented by Sig. *Mazzenta* to Cardinal *Borromeo*. *Leonardo* here handles his Subject as a Philosopher, a Mathematician, and a Painter, and makes mention of this Work, in this Treatise of Painting. This must undoubtedly be an excellent Performance; for *Leonardo* was admirable in that part of Painting: He perfectly understood the effects of Light and Colours, and manag'd them with so much advantage, that his Paintings discover something of Truth and Nature, beyond what is to be found in the Works of any other Master.

In his Treatise of Painting, *Leonardo* promises two other Works. The one on the Motion, and the other on the *Equilibrium* of Bodies.

The last of *Leonardo*'s Treatises which we shall mention, is that which we here offer to the Reader, upon Painting. *Vasari* informs us that a Painter of *Milan* traveling through *Florence*, show'd him this Work, and promised him to get it printed at *Rome*. But he fail'd of his Word, and left the Honour of first publishing this inimitable Piece to the *French*. It was in the Year 1651. that an *Italian* Edition of it appear'd in *Paris*; all imaginable Care having been first taken, to send it into the World

World both Correct and Compleat. And to render the Book ſtill more familiar to the People of *France*, a Tranſlation of it was made into that Language, by *M. Chambre*; a Gentleman of extraordinary Skill in the Polite Arts, and a Maſter in all the Parts of Deſigning.

That Zeal, which the *French* on this occaſion, ſhow'd for the improvement of Painting, ſeem'd ſo very laudable, that we thought it worthy our Imitation; and have accordingly, not only followed their Example in publiſhing a Verſion of this invaluable Treatiſe in our own Language; but have likewiſe obſerved their Advice and Method in the Performance of it: keeping with all neceſſary Severity to the Senſe of the Noble Original; without overlooking the Helps and Aſſiſtances of an excellent Tranſlation. Thus teſtifying our Regard and Eſteem for a Work, which for the Dignity of its Subject, the Excellency of its Precepts, and the Merit of its Author, deſerves Immortality.



A TREATISE OF PAINTING BY *Leonardo da Vinci.*

WHoever would apply himſelf to Painting, muſt, in the firſt Place, learn Perſpective: This will enable him to diſpoſe Things in their proper Places, and to give the due Dimenſions to each: Having done this he muſt learn to * Deſign; chooſing for that Purpoſe ſome able Maſter, who, at the ſame time, may give him an Inſight into the † *Contours* of Figures: He ought then to conſult Nature, to confirm himſelf in what he has already learnt; The firſt Thing to be learned by a Novice in Painting.

* To Draw.

† The Out-lines deſcribing any Body: The *French* ſay, *Contourner une Figure.*

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and, Lastly, Let him apply himself to the Study and Imitation of the Greatest Masters, in order to get a habit of reducing what he has learnt into Practice.

In what a Painter ought principally to exercise himself.

To Design well, and to dispose the Lights and Shadows of Figures suitably to their Situations, being the most considerable Parts of this Art, and those on which the greatest stress depends; it is in these that a Painter who wou'd make any great Proficiency, ought principally to exercise himself.

Of all Animal Operations we plainly perceive Sight to be the most quick: It moves with Incredible velocity, and discovers a Thousand Objects in an Instant. But then it sees them very confusedly, and in effect does not discern above one at a time. For Instance, if you glance your Eye over a Page of this Book, you will immediately perceive it full of different Characters; but what these Characters are, or what is intended by them, will be still a Secret: Insomuch that to gain any determinate Knowledge of what you have seen, you must consider them Piece-meal, forming the Letters into Words, and those again into Periods: So a Man who wou'd mount to the Top of a Building, is content to go up step by step, as knowing it impossible otherwise to reach it: In the same manner, a Person who wou'd attain to a Skill in Painting, must begin with the parts of Objects, e'er he can proceed to represent them entire; and must take them in order, never advancing to a second, e'er he has got a good habit of doing the first: For otherwise, his time will be thrown away, or at least, his advances render'd extremely Slow and Imperceptible. He must further inure himself

The Order to be observ'd in teaching a Novice to Design.

ſelf to work with Patience and Steadineſs, always remembring that a ſlow Diligence will out ſtrip a haſty Negligence.

Some People have a Fancy for Painting, who yet want the neceſſary Diſpoſitions thereto: This is eaſily diſcoverable in Children, who amuſe themſelves with drawing Imperfect Sketches, never troubling themſelves to ſhadow any thing they undertake.

An Inclination not always attended with a Genius to Painting.

A Painter deſerves but a ſmall ſhare of Reputation who only ſucceeds in ſome one Branch of his Art; as for Inſtance in Painting a * *Nudity*, a Head, Drapery, Animals, Landskips, *&c.* ſince the heavieſt Genius by inceſſant plodding on the ſame thing, cannot fail at length, of performing it well.

A Painter to be Univerſal.

A Painter muſt therefore be Univerſal, and apply himſelf to the Study and Conſideration of all Objects; but ſo as to attend in a particular manner to thoſe parts of each, which are the moſt beautiful and perfect: By this means his Imagination will become like a Mirrour, repreſenting every thing laid before it, in its proper Character and Colours.

How a Painter may become Univerſal.

But further, a Painter who is not equally pleas'd with all Parts of his Art, will never become Univerſal. My Friend *Boticello*, for Inſtance had a peculiar Pique againſt Landskips, and thought them much beneath his Application; the effect of which was, that being a very ſorry Landskip Painter, his merit in other matters was the leſs regarded. It was a ſaying of his, that a Palet full of Colours being thrown againſt the Wall, wou'd leave a ſtain behind it

* A Naked Figure, either of a Man, or Woman; eſpecially the latter.

proper-

properly enough representing a Landskip. 'Tis true indeed, that by help of a strong fancy, one may spy Heads, Battles, Rocks, Seas, Clouds, Woods, *&c.* in a Wall so smeared; it being here, as in the Ringing of Bells, where every Body is at liberty to make them say what he pleases: But then, though such a Fortuitous mixture of Colours may start a hint, or give rise to a new Invention, yet will it not furnish the least assistance towards the Execution, or finishing any thing it has occasion'd.

A Painter who wou'd appear Universal, and please People of different Tasts, must set off several Figures in the same Piece, both with very deep and very soft shadows; taking care by the way, to make the reason of such diversity apparent.

The Course a Painter must take in his Studies.

A Painter ought to have his Mind continually at work, and to make Remarks on every Object worthy of notice, that he meets. He ought even to stand still in order to view them with the greater attention; and afterwards to Form rules on what he has observ'd, with regard to Lights, Shadows, Place and other Circumstances. Let him make himself a Master of the Theory, before he meddle with the Practice, and be very curious in comparing the Limbs and *Jonctures* of different Animals with one another: taking Minutes of every thing he learns, the better to fix them in his Memory.

How a Painter may judge of his Proficiency.

A Painter who has no Doubts in his Studies, makes but a small Progress in his Art; It being an infallible Sign, where all things appear easy, that the Workman is insufficient, and the Work above his Pitch. But when once a Painter has got a just Sense of the whole Difficulties of his Work, every new Reflection he makes, will give him

him new Strength to surmount them; insomuch that if he perseveres in it, every Day will contribute something towards his Improvement and Perfection.

Let a Novice in the first Place exercise his Hand, in copying the Designs of some able Master; After he has got a Habit of doing this, he may proceed to *Relievo*'s, designing after them in the Method hereafter to be taught. The manner of learning to Design.

The first Sketch of a History Piece must be very slight, and the Figures very imperfectly form'd; your principal regard being to the justness of their situation: having adjusted the * *Ordonnance* of the Piece, you may finish the Members at your Leisure. How to Sketch out a History-piece.

Whenever either your own Reflection or the Information of your Friends, points out any fault in your work, correct it immediately; lest in exposing the Piece to the World, you expose your own Weakness: Nor flatter your self that what Reputation you lose by letting it escape, may be retriev'd in your next Performance: 'Tis not with Painting as with Musick, which dies in the Breath that gives it Birth: Painting is of a more durable nature, and whatever Over-sights of this kind you make Publick, will be standing Reproaches to you ever afterwards. Nor will it avail to plead Poverty in excuse of your Errors, or to palliate the matter by urging want of Leisure to finish what you do: The Study of Virtue it self will serve for Food to the Body, as well as the Mind: How Faults to be corrected as soon as discovered.

* *Ordonnance* is the placing regularly the Figures, in respect of the whole Composure; or the particular Disposition of Figures, as to the different Groups, Masses, Contrasts, Decorum, Aspect and Situation.

many Philosophers born in the midst of Plenty, have yet abandoned themselves to Penury and Want, to become the more free and disengaged for Virtue, and the Study thereof.

A Painter never to trust his own Judgment.

Nothing deceives us more than the Judgment we form of our own Works; nor are the Opinions of our Friends much more to be relied upon: A Friend is in effect a second self, and therefore to be held in the same Degree of suspicion. 'Tis the Critique of our Enemies that we ought to form our selves by: This is usually sincere; which is more than I can say either for my self, or my Friend.

A New Art of Invention.

Among other things, I shall not scruple to deliver a new method of assisting the Invention; which tho' trifling in appearance may yet be of considerable service, in opening the mind, and putting it upon the Scent of new Thoughts; and 'tis this; if you look at some old Wall covered with dirt, or the odd appearance of some streak'd Stones, you may discover several things like Landskips, Battles, Clouds, uncommon * *Attitudes*, humorous Faces, Draperies, *&c.* out of this confused Mass of Objects, the Mind will be furnish'd with abundance of Designs, and Subjects, perfectly new.

The Advantage of recollecting in the Night, what has been studied in the Day.

I have often found it of use to recollect the Ideas of what I had considered in the day, after I was retir'd to Bed, and incompass'd with the Silence and Obscurity of the Night. For by thus repeating the *Contours*, and other parts of Figures which require a closer attention, their

* Attitude implies little more than Action and Posture; tho' it is sometimes used where neither of these would be proper: for Instance, Action is not applicable to a dead Corps; nor do we say that such a Figure is in a handsom Posture, but in a graceful Attitude, or Disposition.

Images

Images are ſtrongly impreſs'd on the Memory, and familiariz'd to the Mind.

If you intend to become a Proficient, be ſure never to *deſign* any thing ſlightly or in haſte; but take time to conſider, with regard to lights, which parts receive the ſtrongeſt, and in ſhadows which are the deepeſt; obſerve how theſe mingle together, and in what quantity, ſtill comparing the one with the other. As to the *Contours*, conſider towards what part they are to be directed, what quantity of light and ſhadow meet within the Lines, where they are more or leſs ſtrong, larger or ſmaller; and laſtly take care that your lights and ſhadows do not terminate abruptly, but that they fall ſoftly into one another, and at laſt loſe themſelves inſenſibly like Smoke. After you have once habituated your ſelf to be thus punctual and exact in your *Deſigns*, Expedition and Diſpatch will come apace.

A Man to go through a Courſe of Labour and Induſtry e'er he can attain to do Things with Eaſe and Expedition.

While a Painter is employ'd either in deſigning, or Painting, he ought to liſten with attention to the different Sentiments which different People entertain of his Performance: There being no body how Ignorant in Painting ſoever, but who underſtands the Shape of a Man, and can readily tell whether he be hump-Back'd, crook'd-Legg'd, have any thing Monſtrous in his Hand, or any the like Blemiſh: Why may not a Perſon then, who can ſo well diſtinguiſh the defects of Nature, be allow'd to judge of thoſe of Arts?

A Painter to covet the Cenſures of different Perſons on his Works.

'Tis Ridiculous in a Painter to confide ſo far in his Memory, as to think it capable of retaining all he has ſeen and obſerv'd in Nature: The Memory is a Faculty too weak, as well as too narrow for that purpoſe, and the only

A Painter to Deſign after Nature, rather than his own Ideas.

sure way, is to Copy as much as possible from Nature her self.

Variety of Proportions to be affected.

A Painter loses a great deal of his Dignity, by confining his Genius, and never venturing out of his ordinary Course: There are some for Instance, who apply themselves to the Painting of *Nudities*; but so, as still strictly to observe the same Proportions, and never introducing the least variety: Whereas they should consider, that a Man may be well proportion'd, whether he be thick or slender, short or tall. By disregarding this diversity of proportions, a Painter seems to cast all his Figures in the same Mould, which is an Error of the first Magnitude.

No difficult Matter to become Universal.

A Painter well acquainted with the Theory of his Art, may without any great difficulty render himself Universal. For all terrestrial Animals have this in Common with each other, that their Members are composed of Muscles, Nerves, and Bones; the only Difference between them lying in their different Lengths, and Thicknesses, as is demonstrated by the Anatomists. As to Aquatick Animals, in which indeed there is a great Variety, I think a Painter who is well advis'd, will not trouble himself about them.

The Absurdity of meddling with the Practice, before having master'd the Theory.

Those who venture on the Practice, without first qualifying themselves in the Theory, are like Mariners putting out to Sea without either Helm or Compass, Ignorant what Course to take. The Practice ought always to be built on a Rational Theory, of which Perspective is both the Guide and the Gate, and without which, it is Impossible to succeed either in *Designing*, or in any of the Arts depending thereon.

A Painter

A Painter shou'd never tye himself to Imitate the * *Manner* of any other; his Business being not to represent the Works of Men, but those of Nature; who at the same time is so abundant in her Productions, that 'tis Ridiculous to have Recourse to her Servants, who have nothing but what they borrow'd from her; when the Mistress her self is so ready to Entertain them.

One Painter never servilely to imitate another.

To *Design* after Nature, or the Life, you must be removed from the Object, three times its Magnitude; taking care as you draw each Stroke, to observe what parts of your † *Model* meet under the Principal, or Perpendicular Line.

How to design after the Life.

In *Designing*, you must consider that the Shadows of Objects are not always Simple; but that besides the Principal one there are several others, thrown like Smoke, or a thin Cloud upon the Principal Shadow, and for that Reason almost imperceptible: This may be seen by Experience; and the Reason of it shown by Perspective, which Demonstrates, that Spherical Bodies, receive as many different Lights and Shadows as there are different Bodies incompassing them.

A Caution about Lights and Shadows.

* *Manner*, is the Habitude that Painters have acquired, not only in the Management of the Pencil but also in the three principal Parts of Painting, *viz.* Invention, Design, and Colouring: 'Tis by the manner in Painting that we judge this Piece to be *Titian*'s, *Tintoret*'s, or *Vinci*'s Hand; as by the Stile in Writing, we guess this Book to be this or that Author's.

† The *Model* is generally taken for any Natural Object that presents it self to be drawn; in particular, it signifies a Statue, Nudity, or the like, set up in the Academies, to be Copied by the Novices in Painting.

The Light proper to design by.

A North Light will be the most proper for a Painters purpose, as being the Steadiest. If his Chamber be open towards the South, it will be convenient to place an oil'd Sash before it; to the End that the Light of the Sun which will be upon it all Day, being moderated, may spread it self equally, and without any Sensible alteration. The Light by which he Designs from the Life, ought to come from such an Altitude, as that the Shadows of Bodies projected on the Plane, may be equal to their heights.

In representing of Bodies, you must always give them such Lights, as are most suitable to the Places they are supposed to be in. For Instance, if they be suppos'd in the Country, and in the open Air, the Sun being hidden, they ought to be incompass'd with an almost Universal Light; if the Sun be seen, the Shadows must be very dark with respect to the other Parts which receive the Light; and all the Shadows both Primitive and Derivative, must have their Extremities bold, and defined: The Light accompanying these Shadows, must be extremely faint; because the Air, to whose Reflexion they owe that little Light they receive, communicates at the same time its own Colour; weakening the Light it conveys, by mingling its own Azure along with it. This is easily observable in White Objects; such Parts of which, as are illumined by the Sun, plainly appearing tinged with the Colour of that Luminary; but discovers it self still more evidently, when the Sun, hidden behind a Cloud, illumines it with his Rays, and makes it appear Red and Inflamed: For then all Bodies receiving Light from the Cloud, will be tinged and coloured with its Redness; while the other sides of the Bodies,

The Lights proper for Figures design'd after the Life, or after *Relievo's.*

Bodies, turned from the Cloud will appear obſcure, and tinged with the Azure of the Air; ſo that a Perſon, obſerving this Object thus differently illuſtrated, will Imagine it of two Colours. 'Tis a certain Maxim then, founded upon what we know of Nature, and the Cauſe of theſe Lights, and Shadows, that to repreſent them aright, they muſt participate of that which produced them; and that unleſs we make them retain ſomething of their firſt Cauſe, our Imitation of Nature will be Lame and Imperfect. But if the Object you repreſent, be ſuppoſed in a Chamber a little illumined, and that you view it from without, ſtanding in a Line with the Light that breaks in upon it, the Shadows of that Figure muſt of Neceſſity be very ſoft, and the Figure cannot fail, of being very graceful, and of doing Credit to the Painter; for the * *Relievo* will be bold, notwithſtanding the ſoftneſs of the Shadows; and theſe will be the more eminently ſo, on that ſide of the Chamber which is the moſt enlightened, the Shadows there being almoſt inſenſible: The Reaſon of which ſhall be delivered hereafter.

The Lights proper for Figures deſign'd from the Life.

Where the Light is too harſhly cut by the Shadows, it has a very ill Effect: To evade which Inconvenience, 'twill be neceſſary where your Figures are ſuppoſed in the open Air, to avoid placing them in the Sun-Shine; rather feigning a lowering Day, and drawing a few tranſparent Clouds between the Sun and your Figures: By this Means they will be the more

* The *Relievo* is an emboſſed Figure in Sculpture; in Painting it is uſed for that part which comes boldly out, as if it were really emboſſed.

weakly enlightened, and there will be room for the Extremities of their Shadows, to mingle and lose themselves insensibly in the Lights.

How to design a *Nudity*.

In designing a *Nudity*, observe first, to give your Figure its entire *Contour*; afterwards chusing that part of it which you think best, and giving it a just proportion to the rest, proceed to finish it; for without this Method you will never be able to join the several Members together with the Symetry required: Lastly, to add a still further Grace to your Figure, observe that the Head be never turned the same way with the Stomach; that the Arm and Leg have never the same Direction; that if the Head be turn'd towards the Right Shoulder, it be made to stoop a little on the Left Side; that if the Stomach strut forwards, the Head may be turn'd to the Left Side, and the Parts of the Right Side represented higher than those of the Left.

How to Design form the Life.

A Person who wou'd *Design* from the Life, ought to place himself in such a manner, as that his Eye may be in a Level with that of the Figure he is to Copy from.

How to design a Landskip from the Life, or to make an exact Plan of a Country.

Take a Square Piece of Glass, about the size of a quarter of a sheet of Royal Paper, and fixing it directly between your Eyes, and the Objects you wou'd design, remove your self two thirds of your Arms-length, that is, about a Foot and a half backwards. Having then fixed your Head, by means of some Contrivance, so firm as not to move or shake a jot, shut one of your Eyes, and with the Point of a Pencil trace every thing upon the Glass, that you see through it. When your Eyes are at liberty, you may transfer this *Design* from the Glass upon

upon Paper, and chalking the Paper, make a fair Copy from it, to be put into Colours at your Leiſure; but be ſure to obſerve the Aerial Perſpective.

Landskips ought to be Painted in ſuch manner, as that the Trees may appear half inlightened and half Shadowed: The beſt time you can chooſe for this Purpoſe, is when the Sun is half covered with Clouds; for then the Trees receive on the one Hand, an Univerſal Light from the Heavens, and on the other, an Univerſal Shadow from the Earth; and their Parts will be ſo much the darker, as they are nearer the Earth. The Light proper for a Landskip.

When you have no other Light to work by, but that of a Candle, obſerve to place between the Light, and the Figure you wou'd Copy, a Lawn Frame, or an oil'd Paper, or at leaſt a piece of plain Paper unoil'd, provided it be very fine and thin; the Shadows being by this means ſoftned, their extremities will not appear too abrupt and cut off. How to Deſign by Candle-Light.

Lights and Shadows add a ſurprizing Grace to the Faces of Perſons placed at the entrance of a dark Room; every body who ſees them will be charm'd, provided they be well diſpoſed; and ſo as that the Shadow'd ſide of the Face, may appear obſcured by the darkneſs of the Place towards which it is turned; and at the ſame time the Lightened ſide, be further illumined by the brightneſs of the Air, which is diffuſed all over it, and by which Means the Shadows become almoſt inſenſible on that ſide: This augmentation of Light and Shadow, gives Figures a great *Relievo*, and an uncommon Beauty. How in Painting a Head to give it all the Advantage of Light and Shadow.

For

The Light proper for Faces, and all *Carnations* in general to be painted by.

For Faces and other *Nudities*, you must have a Chamber open and exposed to the Air, whose Walls are wash'd with a * *Carnation* Colour. The time you are to chuse for Painting, is the Summer, when the Sun is covered with thin Clouds; but if you fear lest it should break out, you may take care to have the South-Wall of your Chamber rais'd so high, as to be a Screen to the Northern one, and to prevent the Sun Beams from striking upon it; otherwise the reflected Rays will make false Lights, and spoil your Shadows.

The Method to be taken in Designing the Figures in a History-piece.

A Painter must always consider the Place his Painting is to be disposed in, and remark the height of the Plan in which he intends his Figures to be placed; observing when he Designs, that his Sight be as much below the Figure he is upon, as the Place where the Piece is to be exposed, is higher than the Eye of a Spectator: without this Precaution, his Work will inevitably be full of Faults, and can never possibly have a good Effect.

How to Design a *Nudity*, or any other Object from the Life.

Hold a Thread with a Plummet suspended in your Hand, and observe what Parts meet in the same Perpendicular Line.

The Measure or Division of a Statue.

Divide the Head into twelve Degrees, and each Degree into twelve Points, each Point into twelve Minutes, the Minutes into Seconds, and so on; till such time as you have found a Measure, equal to the smallest Parts of your Figure.

How a Painter must place himself with regard to the Light shining upon the Model.

Let *A B* [*Tab.* 1. *Fig.* 1.] be a Window through which the Light enters, *M* the Center of the Light, and *C* the Model: A Painter may here place himself where he pleases, provided

* A Flesh-Colour.

his

his Eye be between the Shadow'd, and the Enlighten'd part of the *Model*: Which Place he may find, by disposing himself between the Point *M*, and that Point of the Model where it ceases to be enlightened, and begins to be Shadow'd.

The Light in which Objects apppear, with the most Advantage.

A High Light, equally diffused, and not too glittering, sets off Objects with the utmost Grace, and shows the smallest Parts of them to the greatest Advantage.

A Painter's Judgment so sometimes imposed upon by the Defects of his own Person.

A Painter who has any thing unseemly, or disproportionate in the make of his own Person, will be extremely lyable to bestow the same blemish on his Figures: This is particularly observable in the Hands, as being continually before our Eyes. A Painter therefore must apply himself, to correct any false Impression, which an Object always present to him, may make on his Imagination; and to guard against that ridiculous Piece of self Love, of fancying every thing Beautiful that resembles himself.

Anatomy necessary for a Painter.

A Painter well acquainted with the Muscles, Tendons, *&c.* will know what, and how many Muscles concur to the Motion of any Member; what Muscle contracting it self, occasions any other to retire; what Tendons and what Ligaments belong to each Muscle, and conspire to make it act: And will look with Contempt on the *Manner* of some Ignorant Painters, who in all sorts of *Attitudes*, do always make the same Muscles appear, in the Arms, Back, Stomach, and other Parts.

Repetition in the same Painting, a Fault.

'Tis a very Gross tho' a very common Fault, to repeat the same *Attitudes*, and the same Folds of the *Drapery*, in the same Painting; and to draw all the Faces so like one another, that they all appear design'd after the same *Model*.

A Painter

How a Painter may secure himself from being abused in the Choice of his Model.

A Painter in the first place ought to Design his Figure from the *Model* of some Natural Body, the Proportions of which, are allowed to be just and beautiful; let him in the next place measure himself, and observe in what part of his Person he differs from his *Model*, and how much that difference is: Having once determined these Points, let him carefully avoid those Faults in his Figures, which he has discover'd in his own Person. A Painter can never be too circumspect on this Head; for as there is no Object nearer, or more familiar to us than our own Body, the Defects of that, do usually pass unregarded: Sometimes we are even fond of them, and not only view them with Delight in our selves, but in others too; it being a Natural Passion of the Soul, to take pleasure in things resembling the Body it animates: 'Tis for this Reason perhaps, that there is no Woman how disagreeable soever she be, but who finds her Gallant.

A Fault of some Painters, who introduce a Figure design'd for one Light, into a Piece supposed to be enlightned by another.

A Painter who had *Design'd* some particular Figure, with strong Lights and Shadows, shall frequently either through Ignorance or Inadvertency, introduce it into a Piece, the *Scene* of which lies in the Country, and demands a Light equally diffused on all sides, and which shows all Parts of the Object. By this means it comes to pass, that contrary to the Establish'd Rules of the * *Clair-obscure*, we often see deep shadows, where there can be none in Nature, or at least where they are almost Insen-

* *Clair-obscure*, by the *Italians* called, *Chiaro oscuro*, is the art of managing Lights and Shadows: So when a Painter chuses an advantageous Light, and disposes his Figures so, as that they receive the Light which are set off with deep Shades, he is said to understand the *Clair-obscure*.

sible;

ſible; and † *Reflex's* where there cannot poſſibly be any at all.

Painting conſiſts of two principal Parts, the one is the *Deſign*, that is, the Figure, or *Contour*, bounding Bodies, and their Parts: The other is the *Colouring*, comprehending the Colours included within the *Contour*. Diviſion of Painting.

Deſigning is likewiſe divided into two Parts: One whereof is the proportion of the Parts with regard both to one another, and to the whole which they Conſtitute: The other is the *Attitude*, which ought to be proper to the Subject, and to correſpond with the Intention, and the Sentiments ſuppoſed to be in the Figure repreſented. Diviſion of Deſigning.

There are three things to be conſidered in the Proportions, *viz.* Juſtneſs, Suitableneſs, and Motion: Juſtneſs takes in the Exact meaſure of the Parts, conſidered, both with regard to one another, and to the whole. By Suitableneſs, we mean the Character proper to each Perſon, according to its Age, State, and Condition; ſo that in the ſame Figure there be not ſeen Parts, both of an old Man and a young one; nor thoſe of a Woman in the Figure of a Man; nor in a beautiful Body, any other than beautiful Parts. Laſtly the Motion, which is nothing but the *Attitude* and Expreſſion of the Sentiments of the Soul, requires a Diſpoſition in every Figure, that may expreſs what it is doing; and the manner it wou'd do it in: For it muſt be obſerv'd that an old Man never appear with the briskneſs and vivacity of a Proportion of the Parts.

† *Reflex* is the Return or Rebound of the Light, bringing with it a Colour borrow'd from the Subject that ſends it back.

young

young one, nor the Force and Vigour of a Robust one; that a Woman never have the Air of a Man; and in short, that whatever either Force or Delicacy, are shown in the Figure, be likewise seen in its Motion.

The Motion and Expression of Figures.

All the Figures in a Painting, ought to be in an *Attitude* suitable to the Subject they represent; so that in viewing them, one may easily know what they think, and what they won'd say. To assist your Imagination, in thus suiting the *Attitudes* to your Figures, consider attentively the Gestures of Mutes, who express the Thoughts and Conceptions of their Mind, by the Motions of their Eyes, Hands, and whole Body: Nor must you be surprized that I send you to a Master without a Tongue, to learn an Art of which he is Ignorant himself; since Experience makes it appear, that he will teach you more by his Actions, than all the World besides, with their Words and Lectures. A Painter therefore, before he fix his *Attitudes*, shou'd consider the Quality of those who speak, together with the Nature of the Business they speak on; in order to apply the Example of a Mute, which I here propose, to his Purpose.

The *Contours* never to be too harsh and apparent.

Never draw the *Contours* of your Figures in any Colour different from that of the Ground they are in; that is, never make any obscure * *Profiles* between the Figures and the Ground.

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* *Profile*, is that which marks out the Parts, Members, and Jettings out, &c. of solid Bodies, and is opposed to the Plan; as when we say the *Profile* of a Church, we mean the Representation of its Height, Depth, and Length, &c. In Sculpture it signifies a Head drawn sideways, as in Medals, &c.

The

The Faults in little Figures, are not so easily discerned as those in larger; the Reason of which is, that the extreme Diminution of the Parts of little Figures, does not allow us to examine strictly into their Proportion: So that 'tis impossible to determin wherein those Parts are defective. For instance, if you look at a Man Three hundred Paces distant from you, with Design to examine the Features of his Face, and to observe whether he be handsome or deformed or of ordinary Appearance; you will find that with how much Earnestness and Attention soever you view him, 'twill be impossible for you to discover to which Class he belongs: The Reason of which, is without doubt owing to the apparent Diminution of the Parts of the Object, occasioned by its great Distance from the Eye. If you doubt whether Distance diminishes Objects, you may be easily convinced by the following Experiment; hold your Hand at some distance from your Face, in such manner, as that pointing up a Finger, the Tip of it may correspond to the Top of the same Persons Head, whom you were before observing; and you will find that your Finger does not only cover his Face, length-wise, but likewise a considerable part of his Body; an evident Proof of the apparent Diminution of the Object!

A Fault not so easily discovered in a small Thing, as a large one.

The Painters are apt to lament themselves, and quarrel with their own Performances, because in copying from the Life, they cannot give their Figures the same Force and *Relievo*, with which Images appear in a Mirrour; urging that they have Colours of greater Lustre, and Shadows much deeper than any the Mirrour exhibits; and laying the whole blame of their Failure, upon their own Ignorance, or Unhappiness

Why the *Relievo*'s in Painting can never be so bold, as those in Nature.

pineſs in the Management of them; but they herein abuſe themſelves, and impute that to their own Weakneſs, which is an Effect purely Natural: A painted Figure muſt of neceſſity appear with leſs *Relievo*, than a Figure ſeen in a Mirrour, (tho' both ſuperficial) unleſs both the one and the other be only viewed with a ſingle Eye; the Reaſon is this: The two Eyes, *A B*, [*Tab.* 1. *Fig.* 2.] viewing the two Objects, *N M* one behind another, *M* cannot entirely intercept the Sight of *N*, the Baſe of the viſual Rays being ſo large, that the farther Object diſcovers it ſelf beyond the firſt; but if you only make uſe of one Eye, as *S*, [*Tab.* 1. *Fig.* 3.] the Object *F* will intercept the whole Extent of *R*, becauſe the Pyramid of Viſual Rays, iſſuing from a Point, has the firſt Body *F* for its Baſe; by which means the ſecond *R*, of the ſame ſize, is entirely hidden *.

Several Hiſtory-pieces, never to be painted one over another on the ſame Front.

'Tis an univerſal Fault, and which Painters every day run into in Painting the Fronts of Churches and Chappels, that after finiſhing ſome Hiſtory-Piece, with the Landskip, Buildings, *&c.* they go on to paint other Pieces, over, and by the ſide of the firſt, ſtill changing the *Perſpective Point*; ſo that the ſame Front ſhall be painted with ſeveral different *Points of View*;

* *Leonardo* is a little obſcure in this Chapter, and may, perhaps have been miſtaken; the Matter, in a few Words, ſeems to be this: Every Painting, is a piece of Perſpective, and the Figures in it, capable of appearing with as much *Relievo*, as the natural Objects they repreſent. But the Figures in Painting are all flat, ſo that we cannot turn round them, to view their different Sides; there being properly but one Point of View, from whence they may be well ſeen; whereas we ſurvey all the ſides of Natural Bodies; and they always appear with the *Relievo* they really have.

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than which nothing can be more abſurd; the *Point of View* in any Painting repreſenting the Eye of a Spectator. If you ask then, how the Life of any Saint divided into ſeveral Hiſtories, may be painted on the ſame Front? I anſwer, that you muſt place your firſt Plan, with its perſpective Point, at ſuch a height as may be the moſt ſuitable to thoſe who are to view it below; repreſenting your principal Hiſtory in large, upon this firſt Plan, and ſtill diminiſhing the Figures and Buildings for the reſt of your Subject, according to the different Situations they are placed in. In the reſt of the Front towards the Top, you may paint Landskips, with Trees, proportionate to the Figures, or Angels, if the Hiſtory require it, or Birds, or barely the Heavens with Clouds and the like Incidents. Without this Conduct, 'twill be much better for you to let theſe ſorts of Paintings alone; for your whole Work will be falſe, and contrary to the Rules of Opticks.

The Light in which Figures appear with the greateſt *Relievo*.

The Figures illuminated with ſome particular Light, ſhow a greater *Relievo*, than thoſe enlight'ned with an univerſal one. For a particular Light produces *Reflex*'s, which looſen the Figures from the Ground of the Painting. Theſe *Reflex*'s riſe from the Lights of ſome Figures, and Rebound upon the Shadows of thoſe oppoſite to them, giving them a faint Light. A Figure however, expoſed to a particular Light, in ſome vaſt obſcure Place, receives no *Reflex*; ſo that there are no Parts of it to be ſeen, but what are enlightned: But this is never uſed, excepting in *Night-Pieces*, where the Light muſt be very dim and particular.

Greater variety in the Lights of

The *Contours* of Figures diſcover more Skill in *Deſigning*, than the Lights and Shadows: The

Shadows of Figures, than in their *Contours.*

first requires the greatest strength of Thought, and the latter the greater Extent and Compass; For the Members are confined to a certain Number of Motions; but the Projections of Shadows, the Qualities of Light, their Degradations, *&c.* are infinite.

The Muscles used in the several Motions of the Body, to be remembred by a Painter.

Take Notes of the Muscles and Tendons, which in different *Attitudes*, and different Motions are either discovered or hidden in each Member, or at least, that are neither the one nor the other: And remember that this is a study of great importance to Painters and Statuaries, whose Profession obliges them to Understand the Muscles, their Functions and Uses. But further, you must make these Remarks on the Human Body, in all its Stages, from Infancy to Old Age; observing the Changes each Member is liable to; for Instance, in growing fatter or leaner, *&c.*

A Remark upon Expression and Attitudes.

In Actions purely Natural, which we perform without Reflection, but which at the same time, spring from a strong Inclination, a Painter shou'd observe what are the first Effects discovering themselves in the Body; and make Sketches of what he Remarks in this kind; for by means of these, he will be enabled on occasion, to place a Body in the same *Attitude*; from whence he may gather, what Parts are concerned in the Action he wou'd represent.

Painting only to be viewed from some single Place.

Painting shou'd only be view'd from one single Place, as may be observ'd from the following Example. If you wou'd represent a round Bowl in any high Place, you must give your Figure an Oval *Contour*, retreating backwards till such time as it appear round.

A Remark upon Shadows.

When in designing after any Body, you find your self unable precisely to determine how far the

the Shadows reach; Be ſure to leave them unfiniſhed in your Painting: By this Ingenuous piece of Negligence, you will at once ſhow your own Modeſty, and the ſtrictneſs wherewith you imitate Nature.

How to repreſent little Children.

Children that are to be repreſented ſitting, muſt ſhow very quick Motions, and even Contorſions of Body; on the contrary, if they be ſtanding, they ſhou'd appear timorous and fearful.

How to repreſent old Men.

To repreſent an old Man ſtanding, you muſt give him a dull Indolent Attitude, with ſlow Motions, his Knees a little bent, his Feet ſtradling, his Back crooked, his Head ſtooping forwards, and his Arms rather folded, than ſpread out too wide.

How to repreſent old Women.

Old Women ſhou'd appear eager and paſſionate, fiery and outragious as Furies: but this Character ought to be expreſſed in the Air of the Face, and the Agitation of the Arms, rather than in the Motions of the Feet.

How to repreſent Women.

Women muſt appear very modeſt and reſerved in their Air, their Knees cloſe together, their Arms a croſs, or folded over the Stomach, the Head gracefully bowing, and a little inclined on one ſide.

How to paint a Night-piece.

A thing wholly devoid of Light, is nothing but Darkneſs: Now the Night being of this Nature, to make any Nocturnal Repreſentation, you muſt take care that there be a large Fire, to illumine your Objects; in the conduct of which, you muſt obſerve the following Rules: Thoſe things that are neareſt the Fire, muſt be the moſt tinged with its Colour, it being a Natural Property of Bodies, that the nearer they are to any Object, the more they receive of its Light, and the more they partake

of its Colour; and as the Fire appears of a Red Colour, every thing illumined by it, must likewise be seen of a Reddish cast; this Redness always growing weaker, and partaking more of the blackness of the Night, in proportion as the Objects are farther removed from the Fire. As to the Figures, observe that those between you and the Fire, do not appear in the least illumined by it; for on the side that you view them, they are only tinged with the obscurity of the Night, there being no possibility of their receiving any thing from the brightness of the Fire: the Figures on either side shou'd appear half Red and half Black; and those seen beyond the Fire, must be all illumined with a Red Light, upon a Black *Ground*. As to the *Attitudes*, such Figures as are nearest the Fire, shou'd hold their Hands before their Faces, and Screen themselves from the scorching heat of the Fire with the Skirts of their Cloaths; turning their Faces the other way, as if they were about to fly from it: Those that are further from the Fire, shou'd likewise appear dazled with the Flame; covering their Eyes with their Hands, to shelter them from the too powerful Light.

How to represent a Tempest.

If you wou'd represent a Tempest, consider attentively its effects. A high Wind, either upon Sea or Land, forces up every thing it meets with if not steadily fixed, tosses it confusedly, and whirls it away. In Painting a Tempest therefore, you must represent the Clouds driven impetuously by the Wind, and clashing against each other; the Air filled with Dust and Sand, swept from the Shores, and gathered into Eddies; Leaves and even Branches of Trees, disorderly blended with other

light

Light Bodies, and hurl'd with rapidity over the whole Region; Herbs beaten close to the Ground; some Trees torn up, their Roots in the Air, others giving way to the Wind, their Boughs broken, or bent contrary to their natural Posture, their Leaves ruffled, and folded in different manners; Men overturn'd, incumbered in their Cloaths, covered with Dust, and scarce to be known, others who keep upon their Feet appearing behind some Tree, and clinging close round it, lest the Storm shou'd transport them; others covering their Eyes with their Hands, for fear of being blinded by the Dust, bending towards the Earth, with their Drapery irregularly fluttering in the Air, or even flying from them in the Wind. If the Storm be represented at Sea, the Waves dashing against each other must cover it with Froth, which being rais'd up by the Wind, may fill the Air as with a thick Cloud; Vessels appearing in the middle of the Water, must discover Sailers holding the ends of broken Ropes, shattered Sails wildly floating, and torn Masts tumbled upon the Deck; others may be represented upon the Point of Ship-wreck, the Waves breaking in, the Mariners shrieking and laying hold of the remaining Wrecks of the Vessel. One may further feign the Air full of Clouds, impetuously driven by the Winds, stop'd and repuls'd by the Mountain-Tops, and having recollected themselves, incompassing them like Waves broken against a Rock; the Day at the same time appearing dark and overshadowed with Dust, Rain, and thick Clouds.

How to represent a Battle.

In the first place you must Paint the Smoke of Artillery, confusedly mingled in the Air, with the Dust arising from the Horses Feet.

In expressing this mixture observe the following Rules. Tho' Dust, by reason of its extreme lightness, does easily mount into the Air, yet has it the common affection of all natural Bodies, I mean Gravity, by which it returns of it self towards the Earth; none but the finest and most subtle Parts of it continuing to float in the Air: it must be Painted therefore of a very thin weak Colour, and not much unlike to that of Air; the Smoke which mingles it self with the Air and Dust, being mounted to a certain Pitch, will appear like dark Clouds; in the more elevated Parts, it will be much more visible than the Dust, and will appear of a Colour somewhat Azure and Blueish; the Dust always retaining its natural Colour. * This mixture of Air, Dust, and Smoke, will appear much brighter on the side whence the Light comes, than on the opposite one. The deeper the Combatants are sunk in this Cloud, the less visible they will be, and the less difference there will be between their Lights and Shadows. The Faces, Persons, Airs, Arms, and every thing about them, must be Painted of a Fiery Red Colour, this Redness always diminishing as it is further removed from its Origin, and at last losing it self intirely. The Figures far distant, between you and the Light, must appear dark, upon a light

* The Authors Words are, *dalla parte che viene il Lume parrà qu sta Mistione d' Aria, fumo, & Polvere, molto più lucida che dalla opposita parte.* Which the *French* Translator has taken the Liberty to alter, turning them thus, *de Melange d'Air, de Fumee, & de Poussiere, sera beaucoup plus clair sur le haut que vers le bas*, i. e. This mixture of Air, Smoke and Dust, will be much clearer at the top, than towards the bottom. One of these two Meanings, we hope, cannot fail to please the Reader.

Ground,

Ground, their Legs being always the leaſt diſtinct and viſible; becauſe the nearer the Earth, the thicker and groſſer is the Duſt. If you repreſent any Horſemen out of the main Battle, remember to raiſe a little Cloud of Duſt behind each of them, at the diſtance of each ſtretch of the Horſe; taking care that they weaken and diſappear, as they become further removed from the Horſe that rais'd them; and obſerving that thoſe which are the fartheſt diſtant, be the higheſt, ſpread the wideſt, and the thinneſt; and thoſe nearer the loweſt, denſeſt, and moſt ſenſible. The Air muſt appear full of trains of Fire, darting like Lightning, ſome upwards ſome down, and others in a level with the Earth. The Balls diſcharged from Fire Arms, muſt leave a train of Smoke behind them; and the Front Figures muſt appear cover'd with Duſt; eſpecially their Eye-brows, and other Parts apt to retain it: The Conquerors muſt be repreſented running, with their Hair ſcatter'd abroad, and both that, and their Draperies blown about by the Wind; their Faces frowning, their Eye-brows ſwell'd, and drawn near one another; their Members muſt make a * *Contraſt* among them, ſo that if the right Foot ſtep the foremoſt, the left Arm muſt be advanced the furtheſt. If you repreſent any one fallen, let the Blood trickling from his Wound, ſtain the Duſt; and let the wet Earth all around be mark'd with the Footſteps of Men and Horſes: You may likewiſe Paint the Figures of

* *Contraſt*, ſignifies Quarrel or Oppoſition; and is uſed to denote the different Aſpects, and Poſitions, either of the Parts of a Figure, as in the Place here refer'd to; or of the Figures forming a Group, or Aſſemblage; as for inſtance, when one Figure ſhows it ſelf ſide-ways, another full before you, a third on the other ſide, *&c.* they make a Contraſt.

Horses, dragging and tearing their dead Masters hanging in the Stirrups, and smearing the Ground they pass over with Blood: The vanquish'd must appear pale, and astonished, their Eye-brows high, their Foreheads full of wrinkles, their Nostrils shrunk into an Arch, and furrow'd from the tip of the Nose, to the Eyes; their Mouths gaping, their Lips turn'd back, discovering the Teeth unclench'd, and in a Posture of shrieking and lamentation. Let some one lying wounded on the Ground, with terror and amazement in his looks, hold one Hand before his Eyes, the Palm towards the Enemy; with the other fix'd on the Earth, supporting his Body: You may show some turning their Backs, and flying with open Mouths: the Field of Battle must be covered with Arms of all sorts, trampled under Foot by the Combatants; shatter'd Helms, Bucklers, broken Swords, shiver'd Lances, and the like: Among the Slain may appear some half covered with Dust, and broken Weapons; others as it were quite buried under them: Streams of Blood must be seen Issuing from the wounded, and flowing into the Dust; and this mixture of Blood and Dust, must cover the Earth with a Purple Mire. Some may be represented in the Pangs of Death, grinding their Teeth, rolling their Eyes, clenching their Fists, and making several Contorsions of Body, Arms, and Legs: another may be seen disarmed, and thrown down by his Enemy, yet still defending himself with his Teeth and Nails. A Horse may be shown broken loose, and running through the Enemy, with his Main disper's'd, and floating in the Wind, beating down all he meets with: Some one wounded, may be seen tumbling to

the

the Ground, and covering himſelf with his Buckler; his Antagoniſt at the ſame time ſtooping over him to take away his Life: There may be likewiſe repreſented a whole croud of Men, confuſedly ſpread under a dead Horſe: Some of the Conquerors may be ſhown retiring out of Battle, wiping their Eyes clamm'd up with Duſt, and their Cheeks ſmear'd with Filth, form'd out of Sweat and Tears which the Duſt had made to trickle from their Eyes: You may likewiſe repreſent Squadrons advancing to ſuccour their Fellows, full of hope, mix'd with circumſpection; their Eye-brows drawn up on high, ſhadowing their Faces with their Hands, the better to diſcern the Enemy through the Duſt, and attentively waiting the commands of their Leader. The General muſt be ſeen with his Truncheon in his Hand, ranging his Troops, and pointing out, what way each Battalion is to move: A River may be repreſented, and Horſemen ſeen plunging through it, daſhing the Water all around them, and raiſing a Froth where ever they paſs. Nothing in fine muſt be ſeen throughout the whole Field of Battle, but what is full of Horror, Blood, and Carnage.

How to repreſent remote Objects.

We all allow the Air to be much groſſer and more denſe in ſome Places than in others; and that in proportion, as it is higher from the Earth, it is more ſubtil, pure, and tranſparent: for this Reaſon high Objects ſeen at a good Diſtance, do not ſhow their under Parts, ſo clearly as the upper; the Viſual Rays by means of which we view the former, travelling through a long track of thick foggy Air; whereas the Rays, by which we ſee the latter, tho' on the ſide of the Eye, they begin in a groſs Air; yet do

do they terminate in a much purer, and refined Air on the side of the Object: So that in Proportion, as they remove farther from the Eye, they become still finer; passing continually out of a pure Air, into a Purer. In painting Landskips, therefore, a Painter must observe to make his Mountain-tops clearer than the bottoms; and even his Hillocks rising over one another, must appear conformable to this Rule: the farther they are removed, the clearer alwas must their Tops be seen; and the higher thev are raised, the more visible and distinct must their Forms, and different Colours discover themselves.

The lower Parts of the Air brighter than the upper.

That part of the Air near our Earth, being grosser than that at a greater Distance, of consequence it must receive and reflect a greater share of Light: This you may observe by looking towards the West, when the Sun is rising: for you will see a considerable Brightness in that quarter, before any Appearance of Light be discoverable over your Head. In painting a Landskip, therefore, where the Sight is supposed to be bounded with a large Plain, the Heavens must be represented brighter, in proportion, as they appear near the Earth; the lower Part, at the same time, being seen whiter and more lucid than the higher, in the same proportion; because the Rays of Light reflected from the former, pass through a larger Track of Gross, white Air than those from the latter, and of Consequence must be more tinged, with the whiteness thereof. But in looking towards the East, when the Sun rises, the Air appears more obscure, in proportion as it is lower; the Sunbeams being scarce able to make their way thro' the Gross, Vapoury Air, of the lower Regions.

The

The Figures of any Body will appear looſen'd from the Painting, and ſtanding out with a great *Relievo*, when the Ground they are painted on is diverſified with bright and obſcure Colours; the greateſt varietv poſſible appearing about the *Contours* of the Figures: But it muſt be obſerved in diſtributing theſe Colours, that a due regard be had to their *Degradation*, that is, to the Diminution of brightneſs in the white, and of Obſcurity in the Dark ones.

How to give Figures a great Relievo, and make them appear ſtanding out from the Ground of the Painting.

In repreſenting Objects after their natural bigneſs, it muſt be obſerved that the front Figures in Pieces of *Miniature*, be equally finiſh'd and diſtinct, with the larger Ones in Painting: But then the Figures in Miniature, being ſmall, muſt be viewed very near, and thoſe of Painting at a much greater Diſtance; by which means, how different ſoever they may be in their real Dimenſions, they ought to appear of the ſame bigneſs; The Eye, in that Caſe, viewing them, under equal Angles, as may be thus demonſtrated: Let *B C* be a Painting, [*Tab.* 1. *Fig.* 4.] *A* the Eye, and *D E* a Glaſs through which the Species of *B C* paſs to the Eye; I ſay that the Eye *A* remaining fix'd, the Image of the Painting *B C*, thrown upon the Glaſs *D E*, will be ſmaller than the Painting, in proportion as the Glaſs is nearer to the Eye, and will be equally finiſh'd and diſtinct with the Painting it ſelf; becauſe it perfectly repreſents the Painting at that diſtance: But if you wou'd make a Copy of *B C* upon *D E*; in that Caſe, the Painting, by reaſon of its Diſtance, appearing indiſtinct, the Figure you make from it, muſt not be equally finiſhed and diſtinct with the Painting; tho', at the ſame time it muſt be more diſtinct than another Figure *M N*, made upon the Glaſs *F G*: For if the

Of repreſenting Objects in their natural bigneſs.

the Figure *P O*, were as much finished as *B C*, the Perspective of the former wou'd be false; since, tho' with regard to the Diminution of the Figure, it wou'd be right, *B C*, being reduced to the Extent *P O*, yet wou'd it be too much finished for its Distance: So that by finishing *P O*, as much as *B C*, *B C* will appear at the nearness of *P O*, and by diminishing *B C* to the Compass *P O*, *P O*, will appear at the distance *B C*.

What Figures to be the most finished.

Things that are near, and that are represented in the front of a Painting, must appear more distinct and finished than those supposed to be seen at a distance.

Take Care that the Colours of your Figures be so matched, as that they may give a Grace to each other, and when you make any; one serve as a Ground to another, let it be done in such a manner, as that they may not appear joyn'd or fasten'd together, even though they be both of the same kind; but observing to make their *Teinte* or Lustre stronger or weaker, in proportion to the Distance, and to the grossness of the Air, interposed between them: and by the same Rule, proportioning their *Contours*; making them more or less bold and distinct as the Figures are nearer, or farther removed.

What Light sets Faces off with the most Advantage.

The Light, striking on the Faces of Persons placed between dark Walls, makes them appear very graceful, and with a great *Relievo*; especially if the Light comes on them, from on high: The Reason of this *Relievo* is, because the most forward and advanc'd Parts of these Faces, are illuminated with the universal Light of the Air before them, so that the Parts thus enlighten'd have Shadows that are almost insensible; the parts farther removed, being, at the same time, shadowed by the Obscurity of the Walls, and receiv-

receiving ſtill more of this Shadow, as they are farther removed from the advanc'd Parts, and deeper involv'd in the Shade. Obſerve farther, that the Light, coming from on high, does not illuminate all Parts of the Face, but that ſome are skreened by the *Relievo* of others; as the Eye-brows keep the Light from the hollow of the Eye, the Noſe from part of the Mouth, and the Chin from the Throat.

Of the Reverberation or Reflex's of Light.

Reflex's of Light, proceed from clear tranſparent Bodies, whoſe Surfaces are poliſhed and moderately denſe; For a Ray of Light ſtriking upon one of theſe Bodies, rebounds like a Ball, and reflects upon the firſt Body that appears its Courſe.

Places where no Light is reflected.

The Surfaces of Denſe Bodies are incompaſs'd with Lights and Shadows of very different Qualities. Of Lights there are two kinds; the one Original, the other borrowed: Original Light, is that inherent in any Body, and which it does not receive from any other; as Fire, the Sun, and even the Air, which laſt, however, though it be well ſtored with Light, yet does it in effect receive it all from the Sun: Borrowd Light, is reflected Light; that which a Body has not in it ſelf, but receives from another. To come to the Purpoſe then; There can be no *Reflex* of Light from that ſide of a Body on which it is ſhadow'd; that is, from that ſide turn'd towards any dark Body, or Place, as Thickets, Trees, Shrubs, Herbs, and the like; For though each Leaf and Branch, receives the Light towards which it is turned, yet does the great Quantity of Leaves and Branches, form an Opake Body, which the Light cannot penetrate.

Reflex's

Of Reflex's. *Reflex*'s will partake more or less of the Colour of the Object on which they are produced, and of the Colour of that which produced them, as the Object that receives them, has a more or less polish'd Surface, than that which produces them.

Of Reflex's thrown upon Shadows. If the Light illumining any Body be reflected upon the Shadows incompassing it, the Reflex's formed thereby, will alleviate, or enlighten the Shadows, in Proportion as their Light is stronger or weaker, and as they are nearer or more Remote from the Body whence the Light proceeds. This Observation is made Use of by some, and as much despised by Others: The Painters have even divided themselves into Factions about it, each Exposing and Ridiculing the other. If you would keep a just Mean, and secure your self from the Censure of either Party, make the proper use of both Opinions: Observing never to make any *Reflex*'s, but where the Necessity of those *Reflex*'s, and their Colours may be evident; nor ever omitting to make them, but where the Reason of such Omission, may be easily perceiv'd by every one.

Where Reflex's appear the most, and where the least. The *Reflex*'s of Light are more or less bright, that is, they are more or less apparent, in proportion as the Ground on which they are seen, is more or less obscure. When the Ground is darker than the *Reflex*, the latter will appear strong and sensible, the former serving as a Foil to it: so where the *Reflex* is found on a Ground brighter than it self, it must of Course appear the more Dim, by reason of the Whiteness surrounding it, becoming, by this means almost Imperceptible.

What part of a Reflex will be the brightest. The *Reflex* will be the most bright and vivid, in that part which receives its light between the

the moſt equal Angles; for Example, ſuppoſe *N* the Center of Light [*Tab.* 1. *Fig.* 5.] and *A B* the enlightened part of the Body *A B C F E D*, from whence the Light is reflected all around the ſhadow'd Concavity of the ſame Body; ſuppoſe likewiſe, the Light reflected on *E* to have been tranſmitted between equal Angles, or Angles nearly ſo: In this Caſe the *Reflex E* will not have Angles ſo equal at the baſe, as the Reflex *F*; as may be eaſily ſeen from the great inequality between the Angles *E A B* and *E B A*: Thus the Point *F* will receive more Light than the Point *E*, and the *Reflex F* will be brighter than the *Reflex E*, ſince, though the Angles *F* and *E* have the ſame baſe, yet the Angles oppoſite to the Point *F*, approach nearer to an equality, than thoſe oppoſite to the Point *E*. Further, the Point *F*, by the Rules of Perſpective, muſt be more enlightned than the Point *E*, becauſe it is nearer the Luminous Body *A B*, whence they receive their Light.

Of the Colour reflected from Fleſh.

The Reflex's of a * *Carnation*, receiving their Light from ſome other *Carnation*, will be of a redder more vivid and more Vermilion Colour than any other Part of the Body: The Reaſon is, becauſe the Surface of any Opake Body partakes more of the Colour of the Body from whence it has its light, as that Body is nearer it, and leſs as it is further removed: It likewiſe participates more or leſs of it, as the Opake Body is greater or ſmaller; becauſe being large, it intercepts the Species of the adjacent Bodies, and prevents them from mingling their Colours

* By Carnation is ſometimes meant barely a Colour; at other times it ſignifies a naked Part of a Figure, uncovered with the Drapery.

with

with its own; which, were it small, wou'd infallibly be the case. Sometimes, however, it happens that a *Reflex* partakes more of the Colour of a small Body, that is near it, than of a larger more remote; the effects of the latter being render'd less sensible, by reason of its distance.

Where Reflex's are the most sensible.

Of all Reflex's, that which is seen on the darkest *Ground*, must appear the boldest and most sensible; and on the contrary, that appearing on the brightest *Ground* the dimmest and least distinct: this arises from the *Contrast* between things of different Obscurities; the least obscure of these serving to set off the others with the greater Lustre, and the brighter to render the others still darker and less perceptible: Just like two things of unequal whiteness, which when opposed to each other, the whitest casts a dimness and foil on the other, beyond what it had of it self.

Of Double and Triple Reflex's.

Double Reflex's are more powerful than single ones, and the Shadows interposed between the *incident* Rays and these Reflex's are scarcely sensible. A simple *Reflex* is that which is formed by one enlighten'd Body alone; whereas a double *Reflex* receives Light from two, and a triple one, from three. To come then to the proof of our Propofition, let *A* be a Luminous Body, [*Tab.* 1. *Fig.* 6.] *A N* and *A S* direct *Reflex's*, *N* and *S* parts illumined by *A*, *O* and *E* parts of the same Bodies, illumined by the *Reflex's*, *A N E* a simple *Reflex*, and *A N O* and *A S O* a double *Reflex*: the simple *Reflex E* is formed by the enlighten'd Body *B D*, and the double *Reflex O* by the two enlighten'd Bodies *B D*, and *D R*; hence the Shadow of the double Reflex will be very thin, and scarce perceptible, being found between the *Incident* Light and that of the *Reflex N O S O*.

One

One Body reflecting light upon another, does not communicate its Colour to that other Body, such as it appears in it self; but tinges it with a mixture of several Colours resulting from different parts of the first Body, upon the same Point of the second. For Example, let *A* be a Yellow Colour, [*Tab.* 1 *Fig.* 7.] reflected upon the part *O* of the Spherical Surface *C O E*, and let the Blue Colour *B* have its *Reflex* upon the same Point *O*; by the mixture of these two Colours in *O*, the Reflex will be converted into a Green if the Ground be white; it appearing from Experience, that Blue and Yellow mingled together do form a very beautiful Green.

The Colour of a Reflex seldom simple, but mixed out of several Colours.

It seldom happens that a *Reflex* is either of the Colour of the Body whence it proceeds, or of the Colour of that upon which it falls; these two Colours usually mingling themselves together, and out of the mixture forming a third. For Instance, suppose the Spherical Body *D F G E*, be of a Yellow Colour, [*Tab.* 1. *Fig.* 8.] the Object *B C* of a Blue one, and let *H* be the Point where a *Reflex* sent from *C B*, strikes upon *D F G E*: The Point *H* in this case will become Green, when illumined by the Light of the Sun diffused in the Air.

The Colour of a Reflex composed of the Colour of the Body whence it proceeds, and of that on which it falls.

Among *Reflex's* which have the same Figure, Force, and Extent, that will show it self with the greatest or least Strength, which terminates on a *Ground* the most or least Obscure.

In what place a Reflex is the most vivid and sensible.

The Surfaces of Bodies partake more of the Colours of Objects, as their Images are reflected upon them, under Angles nearly equal. Of Colours, reflected by Objects upon opposite Bodies, between equal Angles, that will be the most vivid, whose *Reflex* comes from the least Distance. Among the Colours of different Objects,

sending their *Reflex's* from the same distance, and at the same Angles, upon opposite Bodies, that will be reflected with the greatest force, whose Lustre is the strongest. The Object reflecting its Colour with the greatest Vigour upon an opposite Body, is that which has no Colour around it, but of its own kind: And on the contrary, of all *Reflex's*, that produced by the greatest number of Objects of different Colours, will be the most dim and confused.

The Colour nearest any *Reflex* will communicate more of its Tincture, than those at a greater Distance.

Lastly, a Painter must tinge the *Reflex's* of his Figures, with the Colours of such Parts of the *Drapery*, as are nearest the *Carnations* on which these *Reflex's* are thrown; always observing that these reflected Colours do not appear too vivid and distinct, unless where there is some particular Reason for the contrary.

Of Reflected Colours.

All Reflected Colours are less vivid, and appear with less force, than those which receive their Light directly; the direct or *incident* Light, bearing the same Proportion to the Light reflected, which the Luminous Bodies occasioning them, bear to one another in brightness and Lustre. A *Reflex* proceeding from a Body more obscure than that which receives it, will be weak and almost insensible; on the contrary, where the *Ground* on which it is received, is darker than the Surface whence it proceeds, it will be bolder and more visible: Lastly, It will be still more sensible as the *Ground* is more obscure, and dimmer, as it is more bright.

Of the Position of Figures.

As much as the left side of the *Nudity*, D A, is shorten'd on account of the Position of the Figure, so much the opposite Side *B C*, is lengthen'd;

B
D
C

en'd; that is, in proportion as that part of the Figure between the left Shoulder *D*, and the Waſte *A*, is diminiſhed, the part on the Oppoſite ſide, from *B* to *C* is augmented; the Navel or the middle of the Body always continuing in the ſame height. This diminution of Parts on the left ſide of the Figure, ariſes from its reſting on the left Foot, which by this means becomes the Center of the whole Body: Hence it comes to paſs that the middle Point, which is under the Throat between the two *Clavicles*, quits the Perpendicular in which it was found when the Body was Erect, and enters into another which paſſes through the left Leg, and terminates in the left Foot; and the farther this Line deviates from the middle of the Body, the further, likewiſe will the Horizontal Lines which traverſe it, recede from Right Angles; ſtill declining towards the left ſide, on which the Body reſts.

Preliminaries to the Painting of Hiſtory-Pieces.

When you underſtand Perſpective and Anatomy well, and have a tolerable Notion of the Parts and Members of Bodies, take all Occaſions of obſerving the different *Attitudes* and Geſtures of Men, in different Actions. For Example, in your Walks, when the Mind is free and diſingaged, obſerve the Motion of thoſe about you; whether they be converſing familiarly together, diſputing one among another, quarreling, or even coming to Blows: Obſerve the Behaviour of thoſe about them, whether they be indeavouring to ſeparate them, or amuſing themſelves with the ſight of the Scuffle; and whatever you remark in this kind, *Deſign* upon the Spot. For this Purpoſe, it will be convenient to have a Pocket-Book always about you, the Leaves of which may be faſten'd in ſuch manner, as to take out without Tearing. For

these are things that you cannot preserve with two much Care; the Memory it self being far unequal to that Infinity of Objects, which present themselves to a Painter, and which he may find Occasion to make Use of, in his future Performances.

How to proportion the Height of the first Figure in a History-Piece.

The height of the first Figure in a History-Piece, must be less than the Life, in Proportion as it is removed behind the first Line of the *Plan* of your Painting; the same Rule holding in the Diminution of the Rest, which must be all correspondent to the Distance of the *Plan* they are placed in.

Of the Relievo of Figures in a History-Piece.

That Figure in a History-Piece, which is supposed to be nearest the Eye, ought to have the greatest *Relievo*. The Reason is evident, since in several Parcels of the same Colour, that must of necessity appear the boldest and most perfect, which has the least Air interposed between it self and the Eye that views it: 'Tis for this Reason that the Shadows which discover the *Relievo* of Opake Bodies, are always stronger and more obscure, in proportion as they are nearer; the Eye viewing them at a Distance, being confounded by the Air, and unable to distinguish them from the Colours of Objects; whereas, when they are viewed near at Hand, they appear in all their Force, and give each Body a *Relievo*, in proportion to their deepness and Obscurity.

Of the Shortnings of Figures.

When a Painter has only a single Figure to represent in a Piece, he should avoid all *Shortenings*, both of particular Members, and of the whole Body; since otherwise he will be every Minute exposed to the impertinent Questions of such as are unacquainted with his Art; But in large Compositions, where a great Number

of

of Figures are found, he may uſe his Freedom; and eſpecially in Battles; where there muſt of neceſſity appear an infinite variety of Motions, and Contortions, in the Figures engaged in a Scene ſo full of Horror and Confuſion.

Of Diverſity of Figures in a Hiſtory-Piece.

In large Hiſtory-Pieces, it will be neceſſary to introduce Figures of various Kinds, with regard to Shape, Complexion, *Carnations* and *Attitudes*. Some muſt be repreſented Fat and Burly, others Thin and ſhrivel'd; ſome Thick and Short, others Tall and Slendor; ſome Gay and Sprightly, other thoughtful and Melancholly; ſome muſt have lank Hair, others Curld; the brisk and lively Geſtures of ſome, muſt make a *Contraſt* with the ſlow and graver Motions of others: In a few Words, there muſt be variety in the Form, Colour, Drapery, *&c.* Of every thing that enters into the Compoſition of the Piece.

How to ſtudy the Motions of Human Bodies.

When you underſtand the make of a Human Body, its Members, *Jonctures*, and the ſeveral Poſitions theſe are capable of, apply your ſelf to the Study of Motion. And here you will find it of conſiderable Service to draw ſlight Sketches, of any thing in the Actions of thoſe about you, theſe may be worthy of notice; taking care by the way that the Perſons be not apprized of what you are doing, ſince by this means they will infallibly come ſhort of that Force and Spirit in the Action, which otherwiſe they won'd expreſs. Thus when two Men are enraged, with what Violence and Fury do they ruſh upon each other? Their Eye-brows move with briskneſs, and their Arms ſwing impetuouſly every way, and every Geſture and Motion they ſhow, confeſſes the Rage, Choler, and Paſſion that tranſports them. Now it will be impoſſible to

make a *Model* express the Zeal and Fervour, with which a Genuine Rage is attended; or even to represent the Effects of any Real Passion, as Grief, Admiration, Fear, Joy, or the like: A Man is not so much Master of his Passions as to raise and lay them when he pleases. Let a Painter therefore take his Motions and Attitudes from Nature her self, rather than from those who wou'd appear to Mimick her; always remembring, that a just *Contour*, and a lively *Expression* are the most Important parts of his Art.

The Method to be taken in learning to Paint History Pieces.

Your first Essay towards Painting a History-Piece, shou'd be the Sketching out a few slight Figures, and disposing them together; but you must first be able to design them well on all sides, and to manage the *Shortenings* and Extensions of each Member with address: You may then venture to make a *Group* of two Figures fighting together with equal Courage; observing to represent them in different Manners, and *Attitudes*: lastly, you may proceed to Paint a Combat between a brave Cavalier and a Coward; taking occasion in all these Pieces, to Introduce Variety of such Accidents and Passions, as may require *Expression*, and enrich the Subject.

Of the Variety necessary in History-Pieces.

In Pieces of History, a Painter must show something of a Genius and a Talent at Invention, by the abundance and variety of his Figures; studiously avoiding all Repetition of the same thing, and striving to please the Eyes of his Spectators, by an appearance of Novelty. Where the Subject will bear it therefore, let him venture to mingle Men different in Age, Air, and Dress, with Women, Children, Dogs, Horses, Buildings, Landskips, Hills, and the like; taking care that there be something of Dignity in the appearance of a Prince, or a Person

ſon of Quality, and that he be diſtinguiſh'd from the Popnlace. He muſt further obſerve, that in the ſame * *Group*, be never ſeen the Gay and Sprightly, mix'd with the Penſive and Melancholick; it being natural for People of jovial Diſpoſitions, to aſſociate with thoſe of their own kind, and on the contrary, for the ſerious and grave to ſhun thoſe of a different Humour.

The Faces in a Hiſtory-Piece to be Diverſified.

'Tis a Fault, to which the *Italian* Painters are extremely liable, to wit the introducing entire Figures of Emperors and others, imitated from the Ancient Statues, into their Pieces; or at leaſt the giving their Figures, the Air and Appearance by which ſome of the Ancients are diſtinguiſh'd: to avoid this Fault, remember never to repeat the ſame thing, nor ever give the ſame Face, to two Figures in the ſame Painting. And in general you may take it for granted, that the more your *Deſign* is Diverſified, by having that which is ugly, placed near that more beautiful, an Old Man near a Young one, a Robuſt Man near a Weak one, the more pleaſing your Painting will prove. It often happens that a Painter having *deſigned* ſome Animal, will make every ſtroke of it ſerve for his Purpoſe; but herein he is overſeen, for the Members of the Animal while he was deſigning it, were uſually in a Poſture by no means conformable to the Action repreſented in the Painting; thus having finiſh'd the Figure with a great deal of care and

* *Group*, An Aſſemblage or Knot of Figures, gathered together in one *Pelotoon*, *Globus*, or Bottom, as it may be called. One may illuſtrate it by a Conſort of Voices in Muſick, which altogether ſuſtain one another, and from which, if you take away any one the Harmony becomes defective; ſo if a *Group* be not well ballanced with Figures, ſomething or other will appear diſagreeable.

justness, he has the Mortification at last, of finding himself under a necessity of effacing it, and supplying its place with another.

How to match the Colours in such a manner as that they give a Grace to each other.

If you wou'd have the Neighbourhood of one Colour, give a Grace to another, imitate Nature, and do that with your Pencil which the Rays of the Sun do upon a Cloud, in forming a Rainbow; where the Colours fall sweetly into one another, without any stiffness appearing in their extremes.

Observe further, the following Remarks relating to Colours. 1. In representing a deep darkness, be sure you oppose to it a strong White; and to set off a White with the greater force and Lustre, let there be a deep dark opposed to it. 2. Red will appear more vivid near a pale Yellow, than near a Violet. 3. You must distinguish between Colours, which set one another off with a greater force and brightness, and those which only add a Grace to each other; thus Green gives a Grace to Red, and at the same time takes it from Blue. Lastly a pale Yellow or a White, matches very ill with an Azure; the Union of these Colours as well of some others hereafter mentioned, being of mutual disservice.

How to make Colours appear vivid.

You must always provide a very White *Ground* for Colours which you desire to appear bright, provided they be transparent; for others a White Ground is by no means suitable; as is found by Experience, in Painted Glass, the Colours of which appear extremely beautiful, when held between the Eye and the Light, but lose all their Lustre when held to a thick dark Air, or an Opake Body.

Of the Colour of the Shadow of any Colour

The Shadow of any Colour, must always participate of the Colour of its Object; and that in a greater

a greater or leſs Degree, as the Object has more or leſs Light, and as it is nearer, or further diſtant from the Shadow.

Among Colours more obſcure than the Air, that will appear the moſt viſible, which is ſeen at the greateſt diſtance; and on the contrary, among thoſe brighter than the Air, the furtheſt removed will be the dimmeſt and leaſt diſtinct: Thus all things in general, may be ſaid to change the Nature and Quality of their Colour, by being view'd from a great diſtance; the brighteſt in that caſe, appearing more obſcure, and the dimmeſt more vivid. The Variety obſervable in Colours, as they are nearer, or more remote.

A Body loſes its Colour at a greater or leſs diſtance, as the Eye and the Object are at a greater or leſs height from the Earth: This Propoſition I thus demonſtrate; The Air being more or leſs denſe as it is nearer or more remote from the Earth, it follows, that where the Eye and the Object are but a little elevated above the Surface of the Earth, the groſſneſs and denſity of the Interpoſed Air muſt weaken and obſcure the Colour of the Object: But when both the Eye and the Object are conſiderably rais'd above the loweſt Region of the Air, the pureneſs and ſubtilty of the *Medium*, will yield an eaſy Paſſage to the *Species* of the Object, ſo that the Eye will receive them without any ſenſible Diminution of their Luſtre. In fine, that variety and degradation, obſervable in the Colour of an Object, is not only owing to the Light, which at different Hours of the Day is unequally ſplendid, but to the different *Rarity* and Denſity of the Atmoſphere, through which the Colour is tranſmitted to the Eye. At what diſtance the Colour of a Body diſappears.

The Shadow of White expoſed to the Air, will appear bordering upon Blue. The reaſon is The Colour of the Shadow of White.

is owing to this, that White is not properly a Colour of it self, but only the Subject or Receptacle of other Colours: Now having already shown, that every Body partakes of the Colour of its Object, that part of a White Surface oppos'd to the Air, must of necessity appear tinged with its Azure.

What Colour produces the darkest Shadow.

The Shadow bordering the most upon Black, is that which is cast on the Whitest Surface; and this Surface is more peculiarly disposed to produce variety of Shadows, than any other: For White being no Colour of it self, but barely a disposition to receive all Colours indifferently, White Surfaces partake more intensely of the Colour of their Objects, and render it more vivid, than a Surface of any other Colour: This is particularly observable where the Object is Black, or of any obscure Colour, far removed from White; in which case the White appears sensibly clouded, and there is a visible difference between the principal Lights, and principal Shadows.

A Colour sometimes seen with the same force at different Distances, and in Airs of different Densities.

It may sometimes happen, that the same Colour shall not receive any alteration, tho' view'd at different distances; this must be the case, when the several densities of the Air, and the several distances whence the Colours are seen, bear the same proportion: The Proof is as follows; let *A* be an Eye, [*Tab.* 1. *Fig.* 9.] and *H* any Colour that you please, placed one Degree distant from the Eye, and in an Air four Degrees dense; now, because the second Degree above, *A M N I*, is twice as subtile as the Degree beneath, the Colour must be twice the distance of *A H*, removed from the Eye in *A M N L*, to make it appear the same that it did in the former Degree; and of course must be placed in the Point *G*: further

ther, if the Colour be rais'd to a Degree twice as ſubtile as the ſecond, *viz.* to *O M P N*, it muſt be removed to the diſtance *E*; in which caſe the Line of its diſtance *A E*, will be Equivalent in quantity of Air, to the diſtance *A G*, as will appear from the following demonſtration; if in the ſame denſity of Air, the diſtance *A G* interpoſed between the Eye and the Colour, take up two Degrees, and *A E* two Degrees and an half, that difference, is enough to prevent the Colour *G*, from undergoing any alteration in its removal to *E*; becauſe the two Degrees *A C* and *A F*, being in the ſame denſity of Air, are alike and equal; but the Degree of Air *C D*, though equal in length to the Degree *F G*, is nevertheleſs unequal to it in denſity, becauſe it is found in an Air twice as ſubtile as that below; one half Degree diſtance of which laſt, intercepts as much of the Colour, as a whole Degree of the former: By calculating therefore, firſt the denſities of the Air, and laſtly the diſtances, you will find the Colours to have chang'd their places, without any alteration in their Luſtre: the denſity of the Air you may calculate thus; The Colour *H* is placed in an Air four Degrees denſe, the Colour *G* in two, and that *E* in one; now let us ſee whether the diſtances be in a Reciprocal proportion, but converſe; the Colour *E* is diſtant from the Eye two Degrees and a half, the Colour *G* two Degrees, and the Colour *H* one; but theſe diſtances not bearing an exact proportion to the denſities, we muſt proceed to a third *Calculus*, ſomewhat after this manner; the Degree *A C*, we have already ſuppoſed ſimilar and equal to that *A F*, and the half Degree *C B* is ſimilar, but not equal to the degree *A F*, as being but half a Degree in length, which at the

ſame

same time is equal in quantity of Air, to an entire Degree of that above it: The calculation will now be found compleat and satisfactory; for *A C* is equivalent in quantity, to two Degrees of the Air above, and the half Degree *C B* is equivalent to one entire Degree of the said Air, and another Degree is found between *B E*, which makes the Sum of *A E* equivalent to four Degrees of density: Thus *A H* has likewise four Degrees of density; and *A G* has four in like manner, *viz. A F* two, and *F G* as many, which added together make four: so that if the distance *A E*, be not double the distance *A G*, nor quadruple the distance *A H*, yet has it that deficiency supply'd by the half Degree of dense Air *C B*, which is equivalent to a whole Degree of the subtile Air above. Thus have we proved our proposition, which was, that the Colour *H G E*, will be seen the same, at different distances.

Of the Perspective of Colours.

The same Colour being placed at different distances, but at equal heights, its Force or Lustre in each position will be proportional to its respective distance from the Eye that views it; as may be thus prov'd: suppose *E B C D* divided into four parts, each of the same Colour; let the first, *E*, be removed fromthe Eye *A*, two Degrees, the second *B*, four Degrees, the third *C*, six Degrees, and the fourth *T* eight; as is shown in the Arches terminating on the Line *A R*; [*Tab.* 1. *Fig.* 10.] lastly suppose the space *A R S P*, a Degree of subtile Air, and the space *S P E T*, a Degree of denser Air; now the Colour *E* to arrive at the Eye *A*, must pass thro' a Degree of dense Air *E S*, and another Degree of more subtile Air *S A*; and the Colour *B*, must send its Species or Image to the Eye *A*, through two Degrees of dense, and two of subtile Air;

the

the Colour *C* through three Degrees of denſe Air, and three of ſubtile; and the Colour *T* through four Degrees of denſe, and as many of ſubtile Air: Thus, it appears by this example, that the proportion of the weakening or degradation of Colours, is the ſame with that of their diſtances from the Eye that views them; but this is only to be underſtood of Colours ſeen at equal heights; the ſame rule not holding, when they are ſituate in different parts of the Air, whoſe different denſities alter and weaken them unequally.

How a Colour may appear without any Alteration, tho' ſeen in different Places, and where the Air is differently denſe.

A Colour will appear the ſame, though removed into different places where the Air is of different denſities, provided the diſtance and the denſity of the Air, be reciprocally proportional; that is, provided the Colour be no more weakened by the diſtance of the Eye, than its Paſſage is facilitated by the thinneſs of the Air: This may be thus proved; ſuppoſe the firſt or the loweſt Air to have four Degrees of denſity, the Colour to be one Degree diſtant from the Eye, and the ſecond Air, which is higher than the firſt, to have loſt one Degree of its denſity, and to be only poſſeſs'd of three; add one Degree to the diſtance of the Colour; and when the Air which is ſtill higher, has loſt two Degrees of its denſity, and the Colour has gained two Degrees in diſtance; then will your firſt Colour and your third, be perfectly alike: in a word, if your Colour be rais'd ſo high, as that the Air, there want three Degrees of its denſity or groſſneſs, and that the Colour be removed to three Degrees of diſtance, then you may reſt aſſured that the high and diſtant Colour, will receive a Diminution of Luſtre, equal with that of the lower and nearer Colour; becauſe if the Air on high, want three

three quarters of the density of that below, the Colour at its utmost Altitude, has added three quarters to its Primitive distance from the Eye; which was the thing we intended to prove.

Different Colours may appear equally obscure, by means of the same Shadow.

'Tis by no means impossible, but that all the several Colours we see, when involved in a Shadow, may equally lose their different Lustres, and appear transform'd into the single Colour of the Shadow it self: This in effect is no more than what happens every dark Night, during which, we are unable to distinguish either the Figure, or the Colour of any Body whatever: For darkness being nothing but a mere privation of all Light, both incident and reflected, by means of which we discern the Forms and Colours of Objects; it follows that the cause being taken away, the effect must cease of course.

Why the Eye cannot discern some Objects, though really illumined.

There are several places really enlighten'd, which nevertheless appear full of darkness and obscurity, and where the things that are found, remain entirely devoid both of Form, and Colour. This Phænomenon is owing to the Light of the Air, interposing it self between the Eye and the Object; and appears very sensibly in Windows, which when view'd from a far, the Eye sees nothing within them, but a continued uniform obscurity; whereas entring into the places themselves, you will find them well illumined, insomuch that you may be able to distinguish the Figures and Colours of the most minute Objects within them. These two very different Impressions, are owing to the Natural Disposition of the Eye, whose weakness being unable to support the too powerful brightness of the Air, the Pupil contracts it self, and by that means loses a great deal of its force; on the contrary, in places more obscure, the Pupil dilates it self, and acquires

acquires new force, in proportion as it increaſes in extent; by this means, taking in the Images of Objects, and ſeeing their parts very diſtinctly, which before were inviſible.

An Object never appears in its proper Colour, but where the Light illumining it is of the ſame Colour with it ſelf: this is ſeen very ſenſibly in the Colours of Stuffs, the enlighten'd folds of which, throwing Reflex's or caſting Light on the oppoſite folds, ſhow them in their natural Colours. Gold-Leaves have the ſame effect, when they reflect their Light reciprocally from one to another; whereas when they receive their Light from any other Colour, they appear very different.

An Object never appears of its genuine Colour, unleſs it receive its Light from a Colour of the ſame kind.

A Colour will never appear uniform and equal in all its parts, unleſs it terminate on a Ground of the ſame Colour: This is viſible in Black, when found on a White Ground; each Colour in that caſe, appearing ſtronger towards its extremes, than its middle, by reaſon of the foil and oppoſition of its contrary.

Colours receive ſome alteration by the Oppoſition of the Ground they are upon.

A Tranſparent Colour being laid on another Colour of different kind, forms a third, partaking of each of the two ſimples that compoſe it. This is obſervable in Smoke, which meeting with Soot in its Paſſage through the Chimney, becomes Blue; but being mounted into the Air, which is Azure it ſelf, appears Brown or Reddiſh; thus Purple laid upon Blue forms a Violet, and Blue mingled with Yellow, becomes Green; Saffron Colour laid upon White, turns Yellow, and White upon Black, produces Azure; which laſt will be brighter, as the White and Black are more excellent.

The Changes of tranſparent Colours, in being laid upon others.

It muſt here be obſerved, which part of the ſame Colour under its different Circumſtances, appears

The Degree of luſtre in which each

Colour appears the most beautiful.

appears the most Beautiful; whether that which Receives the strongest Light, or that faintly illumined; that of a Shadow, or that of a half Shadow, or even of a Reflex upon a Shadow: To this End it will be necessary to know the particular Colour in Question, there being a great difference among Colours in this Respect; One appearing the most beautiful in one Degree of Strength, and another in another; For instance, the Perfection of Black is in the depth of its Shadow, White on the contrary is the most beautiful in its lightest part, Azure, Green, and Lake in half Shadows, Red and Yellow in their strongest Lights, and Gold in its *Reflex*'s.

The Lights of any Colour more beautiful than its Shadows.

All Colours are more beautiful in their Enlighten'd, than in their Shadow'd parts; the Reason is, because Light shows the Species and the Qualities of Colours, whereas Shadow obscures them, puts out their Natural Beauty, and hinders them from appearing what they are: If you object that Black is the most beautiful in its Shadow, the Answer is very easy, for Black is no Colour.

What Colours the most apparent.

The brighter any Colour is, the better it may be seen at a Distance; the darkest has an Effect quite contrary.

What part of a Colour, ought to be the most beautiful.

Suppose *A* a light, [*Tab.* 1. *Fig.* 11.] *B* a Body directly illumined by it, *E* another Body out of the reach of *A*, and only receiving Light from *B*, which is supposed of a Red Colour: In this Case, the Light communicated from *B* being of the same Colour with the Body, will tinge with Red the Opposite Body *E*; so that if *E* were of a Red Colour before, its Redness will now be heighten'd, and render'd much more beautiful than that of *B*: but supposing

posing it to have been Yellow before, then will there result from the mixture of these two, a dubious Colour partaking both of the One and the Other.

Since 'tis by means of Light that we discover the Quality of Colours, it follows, that where there is the most Light, we see most of the real Colour of the Body enlighten'd; and that where there is the most darkness, the greatest share of Colour is lost in the Shadow; For this Reason, a Painter must always remember to lay the most perfect and beautiful of his Colours, on the enlighten'd Parts. The most beautiful part of a Colour to be placed in the Light.

The Green-Colour, made of Copper-rust, commonly called Verdegris, tho' ground in Oil, will not fail to evaporate in Smoke, and lose its Beauty, unless you cover it with a thin Skin of Varnish, immediately after laying it on; but this is not all, for if you wipe it with a Spunge dipt in clear Water, it will rise from the bottom of the Painting, and peel off like a Water-Colour: This is particularly observable in Moist Weather, and seems to be owing to this, that Verdigris being a kind of Salt, is easily dissolved in moist Air; and especially if soften'd with the additional wetness of a Spunge. Of Verdigris.

Some Aloes *Cavallino* mix'd with your Verdigris, will make it much more beautiful than it was before; and it wou'd become still more so, by the mixture of a little Saffron, cou'd it be prevented from evaporating. The Goodness of your Aloes, will be found in its dissolving in hot *Aqua Vitæ*, which dissolves it much better than Cold: And if after using any of the Verdigris, you go slightly over it with some of this liquified Aloes, you'll find the Colour become incomparably beautiful: Further, this Aloes may be ground How to augment the beauty of Verdigris.

in Oil, either by it self or with Verdigris, or with any other Colour that you please.

Of the mixture of Colours one with another.

Though the Mixture of Colours one with another, do almost admit of an infinite Variety, yet must it not be pass'd over without a few transient Remarks. Accordingly, in the first place, I shall lay down a certain Number of simple Colours as a Foundation; with each of these, mixing each of the Rest, one by one, afterwards two by too, and three by three, proceeding thus to an entire mixture of all the Colours together: Afterwards, I shall begin to Mingle these Colours over again, two by two, then three by three, four by four, and so to the end; upon those two Colours shall be laid three, and to these three shall be added three more, afterwards six, and so on, continuing this Mixture through all the Proportions: Now, by simple Colours, I mean such as cannot be made or supply'd out of the Mixture of any other Colours: White and Black I do not reckon among Colours, the one representing Darkness, and the other Light; that is, the one being a mere Privation of Light, and the other mere Light it self, either Original or Reflected; I shall not omit to speak of these, however, their Use being of the last Importance in Painting, which is nothing in effect, but a Composition of Lights and Shadows, that is, of Bright and Obscure. After White and Black, comes Green and Yellow, then Azure, after Tann'd or Oker, then Violet, and lastly, Red. These Eight being all the simple Colours in Nature, I now proceed to speak of their Mixture. In the first Place, mix Black and White together, then Black and Yellow, and Black and Red; afterwards Yellow and Black, Yellow and Red, *&c.* But, because Paper begins here to fail me (says the Author) I shall treat at large of the Mixture of Colours, in a Work by it self.

The

The Surface of every Opake Body, partakes of the Colour of the Body that enlightens it. This appears in the Inſtance of dark Bodies, none of which ſhow either their Figure or Colour, unleſs the Medium between the Body and the Light, be illumined: If the Opake Body therefore be Yellow, and that whence the Light comes Blue, the illumined part of the Opake Body muſt of conſequence be Green; that being the Reſult of Blue and Yellow mingled together. Of the Surfaces of dark Bodies.

A White Surface is better diſpoſed for the Reception of any Colour, than the Surface of any other Body; provided the latter be not tranſparent. To prove this, we ſay that every empty Body is capable of receiving that, which another Body, not empty, cannot receive; now if you allow White to be empty, or in other Words void of all Colour, it follows that being illumined by a Body of any Colour whatever, it muſt retain more of that Colour, than Black, which, like a broken Veſſel that has loſt its retentive Faculty, lets the Colours ſlip, as faſt as it receives them. What Surface the moſt proper for receiving Colours.

The Surface of any Body, will partake moſt of the Colour of that Object which is neareſt it; the reaſon is obvious, for the Species iſſuing from a near Object, muſt lodge in greater abundance upon the Surface, and make a greater alteration in its Colour, than thoſe emitted from a Body more remote; hence its Colour will be more vivid, and more perfect in its kind, than if it came from a Body at a greater diſtance. A Body will be the moſt tinged with the Colour of its neareſt Object.

The Colour of an Opake Body will be ſo much the more perfect, as it is nearer another Body of the ſame Colour. What Body will appear of the moſt beautiful Colour.

Bodies appear viſible at greater diſtances, in proportion as their Colours are in greater quantities. Of the Carnation of Faces.

tities. Hence we see why Faces disappear even at moderate distances, the greatest share of them being possess'd by Shadows, in comparison of which the Lights are very inconsiderable: Thus, every Face becomes obscure at a shorter distance, as the Shadows bear a greater proportion to the Lights: Further, a Face will become so much the darker as it has more White oppos'd, either before or behind it.

How to Design from Relievo's, and to prepare the Paper for that Purpose.

A Painter, to design from *Relievo*'s must tinge the Surface of his Paper with a Pale imperfect Shadow; he may then proceed to dispose his deeper Shadows; and Lastly, To give his Work the finishing Cast, let him touch his principal Lights, but with a great deal of Adress and Conduct, it being these last Touches, which, at a Moderate Distance, do the soonest disappear to the Eye.

Of the Changes observable in Colours according to their greater or less Distance from the Eye.

Among Colours of the same kind, that which is nearest the Eye will undergo the least Alteration; The Reason of this is Evident, for the Air interposed between the Eye and the Object, has always some Effect upon it, and alters its Colour, either in a greater or less Degree; when the interposed Air, therefore, is found in a small Quantity, it must needs communicate a less share of its own Azure to the Species transmitted through it, and therefore will discolour it less, thanwhen the said Air, being in a greater Quantity, has both a greater share of Colour, and makes more Resistance to the Species, in their Passage.

Of the Verdure seen in the Country.

In a Campagne of the same Quality and Kind, the Verdure of Trees and Plants will appear more obscure, and that of Fields more bright.

An obscure Verdure will approach nearer an Azure, than a bright one; Azure being composed of Bright and Obscure seen at a great Distance.

Of

Of all Surfaces, there is none whoſe Genuine Colour is harder to be diſcern'd, than thoſe which are bright and poliſh'd: This is obſervable, in ſome Herbs, and in the Leaves of ſome Trees, whoſe Surfaces being ſmooth and ſhining, aſſume that Colour, which the Sun's *Reflex* caſts upon them; or, at leaſt, that of the Air, which illumines them: Inſomuch, that in thoſe parts, where theſe *Reflex*'s ſtrike, the Real Colour is but little ſeen. What Bodies do not ſhow their real Colours.

Theſe Bodies, of all others, do beſt diſcover their Natural Colour, whoſe Surfaces are the roughеſt and moſt uneaven; This may be ſeen in Cloth, Linnen, Leaves of Trees, and Herbs that are Furry, on which the Light cannot gather in any Quantity, and which, for that Reaſon, being unable to receive the Images of neighbouring Objects, ſend their Colours pure and unadulterated to the Eye: Hence, theſe Bodies are neither tinged with the blueneſs of the Ambient Air, nor diſcoloured with the Redneſs of the ſetting Sun, even when he paints the Clouds, and the whole Horizon with his Colour. What Bodies do beſt diſcover their natural Colours.

The Colours, Vivacity, and Light of a painted Landskip, will never Vie with thoſe of a natural One illumined by the Sun, unleſs the painted Landskip it ſelf, be likewiſe enlighten'd by the ſame Luminary. The Light of a Landskip.

By how much the Air approaches nearer the Horizon, by ſo much it will participate the more of an Azure; and on the contrary, the more remote from the Horizon, the dimmer and more obſcure, will its Blue be ſeen: The Reaſon of this, I have already given in my Treatiſe of Perſpective, where, I have ſhewn, that a Body both receives and reflects a leſs ſhare of Light, in Proportion as the Body is thinner, Of the Perſpective of the Air, and the Diminution of Colours ſeen at a Diſtance.

and less subtil. Now it is confess'd, that the Air far distant from the Earth, is purer and more refined than that in its Neighbourhood; of Consequence therefore, the upper Regions of the Heavens must be darker, and more obscure than the Air below, through which the Sunbeams penetrating, enlighten an infinity of Atoms swimming in it, and thereby render it visible to the Eye: Hence the Species of the abovemention'd dark Regions, passing through those more enlighten'd Ones underneath; the whiteness of the latter, must of Necessity be qualified by the obscurity of the former, and will thereby become Azure: Now this Azure will appear still brighter, as the Quantity of Air interposed between the Eye and the Obscurer Parts is greater; as for instance, suppose the Eye placed at *P*, [*Tab.* 1. *Fig.* 12.] and let it look along the Line *P R*; then lowering a little, let it look along the Line *P S*; in this latter Case the Air will appear somewhat brighter than in the former, because, it looks through a greater quantity of Gross Air; but if the Eye look directly toward the Horizon, then the Azure which appeared deep in the first Line, and somewhat fainter in the second, will in a measure wholly disappear in the third, there being a much greater Quantity of gross Air in the Horizontal Line *P D*, than in the Oblique One *P S*, or the Perpendicular *P R*.

Of Air seen in the Water of a Landskip.

That Air alone, will have its Image represented on the Surface of the Water, which is reflected from the Water to the Eye between equal Angles; that is, whose Angle of Incidence is equal to its Angle of Reflexion.

Colours diminish'd by the Medium.

Every visible Object, will show so much less of its Natural Colour, as the Medium between

that

that Object and the Eye, is more denſe.

Two Colours, one whereof ſerves for a Ground to the other, whether they be illumined, or ſuppos'd in a Shadow, will appear free and looſe from each other, in proportion as they are found in different Degrees; That is, one Obſcure Colour muſt never ſerve as a ground for another; but for that Uſe you muſt chuſe ſome very different Colour, as White, or ſome other Colour bordering in the ſame Degree upon White, as the other appears bordering upon Black.

The Ground ſuitable both for Lights and Shadows.

When one White Body ſerves as a Ground to another, theſe two Whites, will either be equal, or they will not; If they be equal, then that ſuppos'd to be neareſt you, may be a little obſcured, towards its Extremes bounding on the other; But, if the Ground be leſs White than the Colour laid upon it, then will the latter looſen it ſelf of courſe from the other, ſo that you need not have recourſe to any Expedient or Artifice whatever.

What Remedy to take when one White terminates upon another.

White appears the brighter, as the Ground it is found on, is more obſcure, and on the contrary, more obſcure, as its Ground is more White: This is viſible in Fleeces of Snow, which, while they are floating in the Air illumined on every ſide, appear leſs White, than when viewed over againſt an open Window, where the Obſcurity within-ſide makes a dark Ground, and ſets off the falling Fleeces with an exquiſite White. It muſt likewiſe be obſerved, that Snow when viewed near at hand, ſeems to fall with Quickneſs, and in large continued Quantities; whereas, at a diſtance, it appears in ſmall Flakes, and thoſe deſcending very ſlowly.

The different effects of Colours ſerving as Grounds to White.

Of the Grounds proper in Painting.

Among things equally bright, that will appear the most Dim, which is seen on the whitest Ground; and that, on the contrary, will appear the most vivid, whose Ground is the most obscure. *Carnation* will appear pale upon a Red Ground, but a bright and vivid Red, upon a Yellow one: In like manner, all other Colours may be made to appear different from what they are, by means of the Ground wherewith they are incompass'd.

Of Grounds.

'Tis a thing of the last Importance, and which deserves the most mature Consideration, to chuse proper Grounds for your Figures, and to dispose your Opake Bodies in such manner as may be most advantageous to their Lights and Shadows; always taking Care that their illuminated Parts appear on dark Grounds, and their shadow'd Parts on Grounds that are more bright; an Instance of which you may find in *Tab.* 1. *Fig.* 14.

A common Mistake in painting Country-Pieces.

Many People are of Opinion, that, in an open Campagne, the Figures must appear more obscure, in proportion as they are further remov'd from the Eye; but herein they are unhappily mistaken, for the very contrary method ought commonly to be observ'd, excepting where the thing to be represented is White; as we shall have occasion to show more at large underneath.

Of the Colours of Objects far distant from the Eye.

Those Objects view'd through the greatest extent of gross Air, appear the most tinged with its Azure; so that the Air communicates a greater share of its Colour to a Body seen at two Miles distance from the Eye, than to the same Body when seen at half that distance: Here some one may Object, that in Landskips the Trees near at hand, appear brighter than those at a greater distance, which seems to overthrow

our

our propoſition; but this Objection is uſually falſe, when underſtood of Trees ranged at equal diſtances; and does only hold true, where the neareſt Trees are placed ſo wide from each other, that between them you ſee the Light of the Air, and of the Intermediate Fields, the more remote at the ſame time being cloſer and more compact, as is often obſerv'd on the Banks of Rivers, where the Trees are ſeen ſo near to each other, that they join their Shadows, and prevent either the Verdure of the Fields, or the Brightneſs of the Air from appearing. It muſt be obſerv'd however, that as the Shadow'd part of a Tree is more large than the part illumined, its Image will be ſtronger, and will preſerve it ſelf better, than that of the other; for which reaſon, a far diſtant Tree may happen to appear more obſcure than a near one, notwithſtanding the Azure brightneſs communicated by the Air to the latter.

Degrees of Colour in Painting.

That which is beautiful, is not always good; this is intended for certain Painters, who are ſo taken with the beauty of their Colours, that they can find no room for Shadows; never uſing any but what are ſlight and almoſt inſenſible. Theſe People have no regard, to that force and *Relievo* which Figures receive from a bold Shadow; and are ſomewhat like your fine Talkers, who uſe abundance of good Words, but without any meaning.

The Sea of different Colours, when ſeen from different Places.

The Ocean has no uniform, univerſal Colour appearing the ſame throughout; a Spectator at Land ſees it obſcure, and eſpecially near the Shore, ſome White Waves appearing near the Horizon ſlowly moving, like Flocks of Sheep; to thoſe at Sea it appears Blueiſh, and the reaſon of this difference, is no hard matter to determine:

mine: the Ocean having the Faculty of a Mirrour, representing the Azure of the Air at high Sea, and the obscurity of the Earth nearer Shore.

The Effects of Drapery on Carnations. A Black Drapery makes the *Carnations* of Figures appear whiter than they are, and on the contrary White Garments makes them show more obscure: A Yellow dress heightens them, and a Red one turns them pale.

Colour of the Shadows of Bodies. The Colour of a Body shadow'd by another Body, will never be pure in its shadow'd part, except the Colour of the Object whence the Shadow comes, be the same with that on which it is cast; for instance, if in a Chamber the Walls of which are Green, be exposed, some Body whose Colour is Blue, and illumined by another Blue; in this case the enlighten'd side of the Object will be seen of a very beautiful Blue, the Shadow at the same time appearing foul and disagreeable; retaining nothing of the brightness of its original Azure, but mixing and debasing it with the Green reflected from the Walls; and the effect wou'd be still the worse were the Walls of a tann'd Colour.

Diminution of Colours in dark Places. In Luminous places, gradually and uniformly retreating to perfect darkness, a Colour will dwindle with an insensible diminution of Lustre, as it removes further from the Eye.

Of the Perspective of Colours. The Primary Colours must be all pure and simple, and the Degrees of their weakening, and those of their distances must agree reciprocally to each other; that is, the bigness of Objects must partake more of the bigness of their Point of view, as they are nearer it; and in the same manner, the Colours must participate more of the Colour of their *Horizon*, as they approach nearer thereto.

The

The Colour between the ſhadow'd and enlighten'd parts of Opake Bodies, will be leſs beautiful than that entirely illumined; the principal beauty of Colours therefore, is ſeen in their principal Lights. Of Colours.

The Azure of the Air, ariſes from its being a denſe tranſparent Body, illumined by the Sun, and placed between the Earth and the darkneſs of the upper Regions. Of it ſelf, it is intirely void of all qualities, having neither Smell, Taſt, nor Colour; yet does it eaſily aſſume thoſe of things about it, inſomuch that it appears of an Azure, by ſo much the more perfect as the darkneſs behind it is more groſs, and the Light it receives more vivid; provided however that it be at a ſuitable diſtance, and not too much charged with moiſt Vapours. It may further be obſerv'd, that towards Mountains, that Air appears of the moſt perfect Azure which the Eye ſees at the greateſt diſtance, and which is interpoſed between that and the moſt obſcure part of thoſe Mountains; the nearer and more illumined Hills communicating their own Colour to the Air, in their paſſage to the Eye. Whence the Air derives its Azure.

Among Colours which are not Blue, that which comes the neareſt Black, will participate the moſt of Azure at a diſtance; and on the contrary, that Colour will beſt preſerve its ſelf at a diſtance, which has the leaſt conformity with Black: It follows therefore, that the Verdure of Fields will ſooner transform it ſelf into Azure, than White or Yellow; and for the ſame reaſon, White and Yellow will change leſs than Red and Violet. What Colours moſt liable to Change.

The Colours placed in Shadows, will retain more or leſs of their natural beauty as they are ſeen in a greater or leſs obſcurity; but if they be Of Colours ſeen in obſcure Places

ſeen

seen in any light place, then will their beauty appear the more elevated, as their place is more illumined: Some may object that the variety in Shadows, is as great as in the Colours of things shadowed; to which I answer, that the Colours seen in Shadows, show so much less variety among themselves, as the Shadows they are situate in, are more obscure: This is confirmed by those who standing without doors, look into dark Churches, where the Paintings though diversified in Colours, do nevertheless all appear wrapp'd up in one universal Shadow.

The Ground incompassing a Figure.

The Ground wherewith a Painted Figure is incompassed, must be more obscure than the enlighten'd part, and brighter than the shadow'd part of the said Figure.

White no Colour.

White is not a Colour in it self, but only a Faculty or Disposition in Bodies to receive Colour: When it is exposed in the open Air, its Shadows do all appear Blueish, because the Surface of every Opake Body partakes of the Colour of the Object that illumines it. If it be screen'd from the Light of the Sun by the interposition of any Opake Body, it will remain Blank, without the appearance of any Colour whatever. When it is exposed to the Light of the Sun, and the Air, it participates of the Colour both of the one and the other; that part of it turn'd from the Sun, appearing obscure, being tinged with the Azure of the Air alone: Lastly, White if secured both from the Greenness of the Champagne, and the Whiteness of the Horizon around, wou'd, without doubt, appear simply and without alteration, of the Colour of the Air.

The Colour reflected from Fire.

The Light of a Fire tinges every thing it illumines, with Yellow; but this does never appear,

pear, excepting when view'd in oppoſition to ſome other thing enlighten'd by the Air. It may be obſerv'd towards the cloſe of the Day, and better about the Dawn, or in a dark Room; where a Ray being reflected from the Air, and another emitted from a Fire, or Candle, upon the ſame Object, their difference will be very plain and obvious. But without thus oppoſing them to each other, their difference wou'd be ſcarcely ſenſible; nor without this Method wou'd it be eaſy to diſtinguiſh between ſeveral Colours which bear a near affinity to each other; as for inſtance, White and Yellow, Sea-Green and Azure; for in effect, the Light illumining the Air, being Yellowiſh, tinges the Blue into a kind of Green, which may be further improved into a very beautiful Green, by the mixture of a little more Yellow.

Of an Opake Body placed between two Lights.

When an Opake Body is found between two Lights, the effect will be as follows: Theſe two Lights will be either equal to each other in force, or they will be unequal; if they be equal, they may yet differ two ways with regard to the brightneſs which they caſt upon the Object, which will be either equal or unequal; equal when their diſtances are equal, and unequal, their diſtances being ſo: The Object placed at an equal diſtance, between two Lights equal both in brightneſs and Colour, may further be illumined by theſe Lights in two different manners; to wit, either equally on every ſide, or unequally; it will be equally enlighten'd, when the ſpace remaining around the Lights is equal both in Colour, Shadow, and Brightneſs; and unequally when theſe ſpaces around the Lights are found to differ in their Colour, Brightneſs, or degree of obſcurity.

It

Of the Colour of Shadows.

It often happens, that the illumined and shadowed Parts of the same Body, are seen of different Colours; the one, for Instance, appearing Red, and the other Green; the Body, it self, being all the while uniform and alike in its Colour, throughout. Now this is observ'd, when the Light issuing out of the East, strikes upon an Object, and tinges it with the Colour of its own Rays; another Object at the same time being placed to the Westward, of a Colour different from the first, and illumined by the same Light: In this Case, the Light reflected from the latter Object, bounding towards the East, will strike upon those Parts of the first Object, which fall in their Way; and stopping there, will communicate the Light, and Colour of the one Object, to the opposite side of the other. My self have frequently observed a white Object, with Red Lights, and blue Shadows; This being no uncommon Appearance, in Mountains cover'd with Snow, when the Sun, at his setting, paints the whole Horizon with a Redness like Flame. *See Fig.* 15. *Tab.* 1.

On what Occasions a bright Ground is necessary in Painting.

When a dark Body, is painted upon a bright *Ground*, it appears with a great *Relievo*, and seems to stand out free from the Painting; the Reason of this is owing to the Curve Surfaces of Bodies, which of necessity growing dark on that side turned from the Light, the difference between the Ground and that side of the Figure, becomes very bold and conspicuous: It must further be observed, that the illuminated part of a Figure ought never to terminate on a Ground brightned by its principal Light; To prevent which, it may be advisable, between the Ground and the chief Light, to interpose the Extremity of some other Body, more obscure than

Tab. I.

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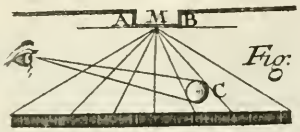


Fig. 1.

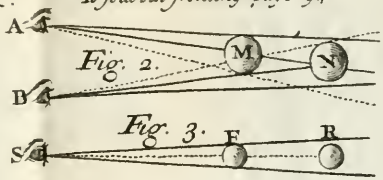
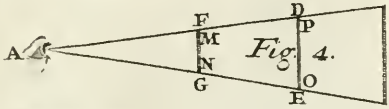


Fig. 2.

Fig. 3.



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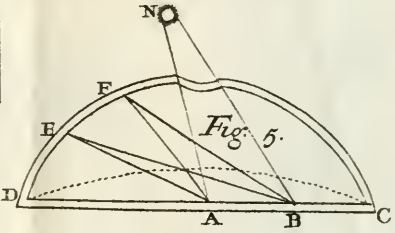

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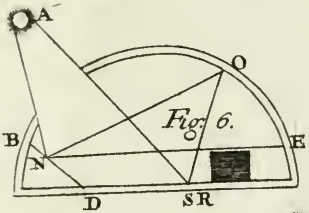

Fig. 6.

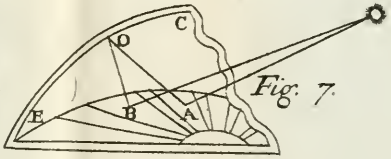

Fig. 7.

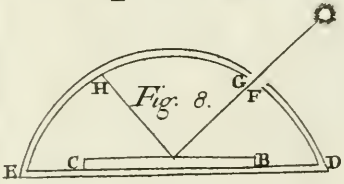

Fig. 8.

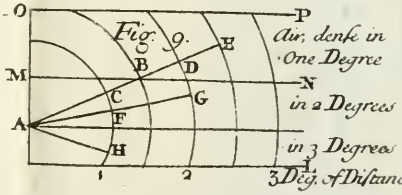

Fig. 9.

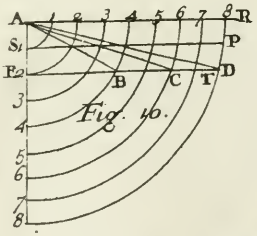

Fig. 10.

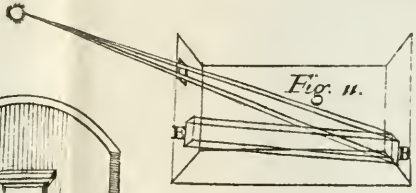

Fig. 11.

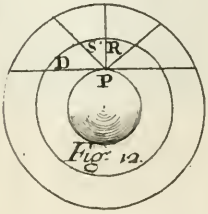

Fig. 12.

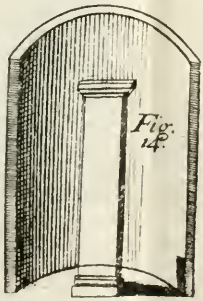
Fig. 14.

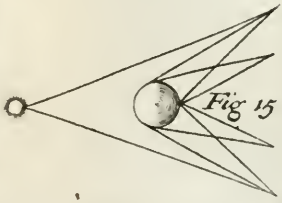
Fig. 15

On what
casions a
bright
Ground is
ceſſary ir
Painting.

than either the Ground or the Light, respectively.

To make a bright Figure appear with Advantage, you must show it on a Dark Ground; as to set off an Obscure Figure, your Ground must be bright; for White ever appears the best, neareſt Black; and in general, all contraries appear with a superior Force, when opposed one to another. How to suit your Grounds to your Figures.

Of simple Colours, the first in order is White: this, and Black, we know are excluded by the Philosopher out of the number of Colours, the one being the cause of Colour, and the other its privation; however, inasmuch as they are indispensibly necessary for a Painter, we shall not scruple to admit them among the rest, yielding the first place among simple Colours to White, Yellow has the second, Green the third, Azure the fourth, Red the fifth, and Black the sixth: White we shall lay down for Light, without which no Colour can be seen; we must have Yellow to represent the Earth, Green for Water, Azure for Air, Red for Fire, and Black for Darkness. As to compound Colours, if you desire to arrive at a speedy knowledge of them in all their variety, do but take some Pieces of Painted Glass, and through these Survey all the several Colours which present themselves to the Eye, in a Country Scene; thus will you find the Colour of every Object which you view, mingled and adulterated with that of the Glass, and may easily perceive which undergoes a change more or less to its advantage; which receives additional beauties, and which are stripp'd of their original charms; for instance, if your Glass be Painted with Yellow, you will find Azure, Black and White considerable sufferers by the mixture, and Of simple Colours and their Composition.

at

at the same time, Yellow and Green will be beautified, and made more perfect. Other Glasses will have their influences on other Colours, all which you must carefully observe and consider; still chusing out, for your own Use, such whose Composition appears the newest, and most agreeable. When you have thus carried your Observations through the whole variety of Colours, and have viewed them all through a Glass of each kind, proceed to combine Glasses of different Colours; using first two, then three, after four, and even five, or six, if you find Occasion for so many; still observing the Rules already laid down for the simple ones.

Remarks on Colours.

Azure, and Green are not simple Colours in themselves, the former being composed of Light and Darkness, that is, of a perfect Black and a perfect White, as we have already observed of the Azure of the Air; and the latter, of one simple Colour, and one Compound, to wit, Azure and Yellow, which together, form a Green.

An Image exhibited in a Mirrour does always participate of the Colour thereof, and the Mirrour is reciprocally tinged with the Colour of the Image it exhibits; these do still borrow more, the one of the other, as the Colour of the Object is stronger than that of the Mirrour; and the Image will ever appear more vivid, and perfect in its Colour, as that is nearer and more akin to the Colour of the Mirrour.

Among the Colours of Bodies, that which is of the brightest White, will be seen at the greatest distance; of consequence therefore, that will disappear at the smallest distance, which is the most obscure.

Among

Among Bodies of equal Whiteneſs, and equally diſtant from the Eye, that will appear to be the whiteſt, which is incompaſſed with the greateſt Obſcurity: And, on the contrary, that Obſcurity will be ſeen the darkeſt, which bounds on the brighteſt White.

Of Colours equally excellent, that will appear the moſt perfect, which is ſeen neareſt its direct contrary: thus, a pale Colour, near a Red one, Black, near White, (tho' neither the one, nor the other, properly a Colour,) Gold, near Azure; and Green, near Red, appear with Advantage; it being a natural Property of all Colours, to ſhow themſelves more, near their Oppoſites, than near thoſe alike to them.

A White Object ſeen in a dark, thick Air, will appear larger than it is in reality; the Reaſon has been already aſſign'd, where a black Figure was ſhown to inlarge it ſelf, on a bright Ground.

The Medium between the Eye and the Object, diſguiſes the latter with its own Colour; Thus Mountains, at a great Diſtance, are ſeen coloured with Azure; thus a Red Glaſs, tinges every thing ſeen through it, with Red; And thus the Light around the Stars is altered and obſcured, by the darkneſs of the Night.

The Genuine Colour of any Body, appears in that part, which neither receives any Shadow, nor any bright Light.

When a bright Colour terminates upon an Obſcure one, the Extremities of the former will by that means become brighter, and more vivid; and thoſe of the latter deeper and more obſcure.

Among Mountains far removed from the Eye, that will appear of the moſt beautiful Azure, Of the Colour of Mountains.

which is in itself the most obscure; and that will be the most Obscure, which, is the highest, and most covered with Wood; because of the Shrubs found beneath the larger Trees, which being shadow'd from the Sun, appear Dark and Gloomy; Now the illumined Air, interposed between these Shadowy Mountains and the Eye, must of necessity have its Azure heighten'd and made more perfect by means thereof; and the tops of High Mountains, being likewise the more Obscure, by reason of the thinness of their Medium, will have the same Effect on the Air, through which they are viewed. It follows, therefore, from what we have already laid down, that the Mountains themselves, must appear under the same diversity of Azures, with those of the Airs through which they are viewed; and that the tallest, and the shadyest will excel the rest, in the Beauty of their Colour.

How a Painter may put in practice the Perspective of Colours.

To enable your self to manage the Perspective of Colours, and to make their Changes, Weakenings, and Degradations correspond to Nature; take the following Method. In some Open Champagne, chuse out several Objects placed at the distance of one or two hundred Fathoms from each other; be they Men, Trees, Houses, or the like. Now, if for instance, your first Object be a Tree, place a Glass over against it, and holding your Eyes steadily in the same Position, *Design* your Tree upon the Glass; tracing out the *Contour* from the Image before your Eye; having done this, retire backwards till such time as the Natural Tree appears nearly equal with that you have Design'd; Here you may colour the Figure, taking your Measures from the Object appearing at a Distance; and touching it with Care, and Attention, till at length

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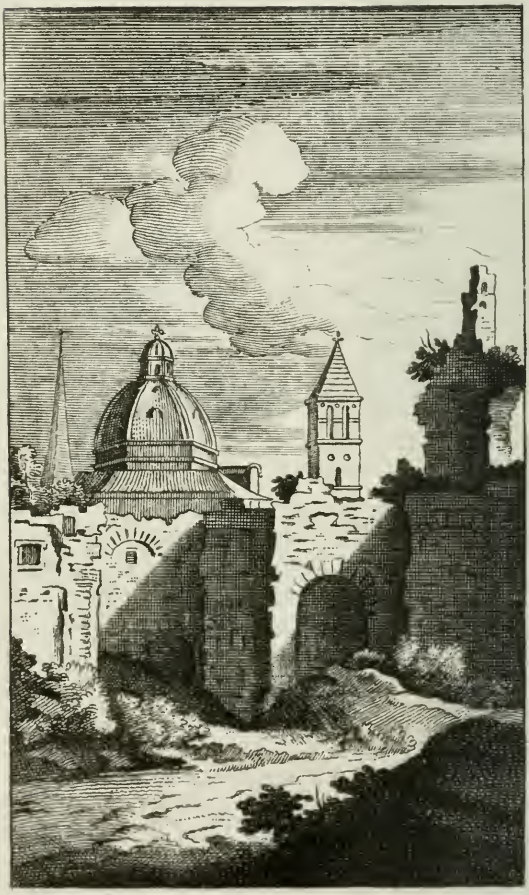

length it be brought to reſemble the Natural Tree, both in Form and Colour; inſomuch that by ſhutting one Eye, they may appear both painted alike, and both equally diſtant: Continue the ſame Courſe, with regard to the other Objects, at the Second and Third Diſtance; treaſuring up ſuch Pieces as you perform in this way, and conſulting them on all Occaſions, as Guides and Rules for your Conduct. By the Experiments I have made in this kind, it appears that the ſecond Object, at the Diſtance of twenty Fathoms, beyond the firſt, diminiſhes four Fifths of its bigneſs.

Of the Aerial Perſpective.

There is ſtill another kind of Perſpective, called the *Aerial* One; which by the different Colours of the Air, ſhows the different Diſtances of ſeveral Objects placed in the ſame Line. For Inſtance, if in ſeeing a Number of Buildings riſing behind a Wall, which appear of the ſame bigneſs, and ranged in the ſame Line, you have a Deſire to paint them, in ſuch manner, as that one may appear further removed from the Eye, than another; To favour this Deſign, you muſt repreſent the Air, ſomewhat Groſſer than Ordinary; becauſe, in that Caſe, it will tinge far diſtant Bodies very ſenſibly with its Azure, as is obſerved in Mountains, *&c.* This, once ſuppoſed, you may ſhow the Building which appears firſt, on the other ſide the Wall, in its natural Colour; The next, which is to be a little further removed, muſt have its *Profile* a little more ſlight, and muſt farther ſhow a faint Tincture of Azure; the Third, which is to be ſtill further diſtant, muſt appear ſtill more Azure, in proportion; and, if you wou'd repreſent a Fourth, removed five time the diſtance of the laſt, you muſt diſtinguiſh it with an Azure five Degrees more

strong and sensible: By this Means, your Buildings, tho' painted all in a Line, and of the same bigness, will nevertheless discover themselves to be all considerably different, both in Bigness and Distance.

Remark on the Proportions of a Human Body.

The Measures of a Human Body, alter in each Member, as it is more or less bent, and in different Aspects, always increasing or diminishing more or less on one side, as they diminish or increase more or less on the other.

The different Proportions in the Body of a Man, and that of a Child.

Man, in his first Infancy, has the breadth of his Shoulders, equal to the length of his Face; as likewise, to that part of his Arm between the Shoulder and the Elbow, when the Arm is bent: It is, likewise, equal to the space between the Elbow, and the long Finger; and further, to the interval between the *Jonctures* of the Knee and that of the Foot: But when he is arrived at his utmost pitch, these Measures become all double in length, except the Face, which, together with the Head, undergoes very little Alteration: Thus, a Man come to his full Growth, if he be well proportioned, ought to be in height ten Faces, the breadth of his Shoulders, two Faces, and all the other parts, just mentioned, as many: For the rest, we shall treat of them, when we come to consider the Proportions of all the Parts of a Human Body.

Children have their *Jonctures* contrary to those of Men, with regard to bulk and Grossness.

Little Children have their *Jonctures* extremely small and slender, and the Intervals between them grosser and more bulky; this happens because the *Jonctures* have nothing but a bare Skin to cover them, and a few cartilagenous Membranes to bind the Bones together; all the soft and juicy Flesh being lodged underneath the Skin, between the several *Jonctures*: While the Man is in his Growth, the Flesh discharges it self

ſelf of a great deal of theſe Superfluities, ſo that his Members, in Proportion, become more ſlender: But the *Jonctures*, which conſiſt of nothing but Bones and Cartilages, not keeping pace with them in this Decreaſe; the effect is, that the Child who had his *Jonctures* ſmall and skinny, and the Parts between them fat and plump, as is ſeen in the Fingers, Arms, and Shoulders; when come to Manhood, has his *Jonctures* ſtrong and bulky; the ſame Parts being bold and prominent in the Man, which were thin and hollow in the Child.

A remarkable difference in the Meaſures of a Man and a Child.

Between a Man and a Child, is found a very conſiderable difference in the length from one *Jonćture* to another; for a Man, from the *Jonćture* of his Shoulders to his Elbow, and between the Elbow and the tip of the Thumb, and from the Extremity of one Shoulder, to that of the other, has the Meaſure of two Heads; whereas the Meaſure of a Child in theſe parts is but one. The Reaſon appears to be this, that Nature in the firſt place, employs her ſelf about the Head, as being the principal Part, and the ſeat of the Underſtanding; ſetting aſide the other leſs conſiderable Parts of her Fabrick, till ſhe has formed the *Capital*.

The *Jonctures* of Fingers.

The *Jonctures* of the Fingers, grow bigger on every ſide when they are bent; the more they are bent, the more this appears, and the more they are ſtreightened, the leſs do they again grow: The ſame thing happens in the Toes, and is always more ſenſible as they are bigger and more fleſhy.

The Motion of Shoulders.

The *Jonctures* of the Shoulders, and of the other flexible Members ſhall be explained in my Treatiſe of Anatomy; wherein will be ſhewn,

the Causes of the Motions, in all the Parts of a Human Body.

Of the Shoulders. The Motions produced by the *Jonctures* of the Shoulders, are mostly simple; that is, the Arm directed by them, is usually carried either upwards or downwards, backwards or forwards. Though these Motions may be said to be infinite; yet in Effect, does the Arm in describing a Circle on the Wall, show all the Motions it is capable of. For every continued Quantity being divisible in *infinitum*, and this Circle being a continued Quantity produced by the Motion of the Arm around its Circumference, it follows of Course, that the Motions of the Shoulders are infinite.

No universal Measure to be prescribed for the breadths of Figures. Universal Measures of Bodies, are only to be observed in the heights not in the breadths of Figures; it being one of the Wonders of Nature, that in all her infinite Productions, we never find any one, of what kind soever, precisely like another. You therefore, whose Business it is to imitate Nature, consider that Variety which she sets before your Eyes; and learn from her, to diversifie your Contours; avoiding withal, any thing Monsterous and Shocking, as Legs too long, Bodies too short, strait Breasts, long Arms, and the like; and indulging your self chiefly in the *Jonctures* and Thicknesses of Members; it being in these that Nature her self seems to affect the greatest Variety.

The Arm longer when bent, than when stretch'd out. A Painter is indispensibly obliged to be acquainted with *Osteology*: That is, with the several Bones serving as Props to bear up the Flesh, wherewith they are covered; and with the *Jonctures*, which occasion the Limbs in bending to enlarge and diminish; for the length of the Arm

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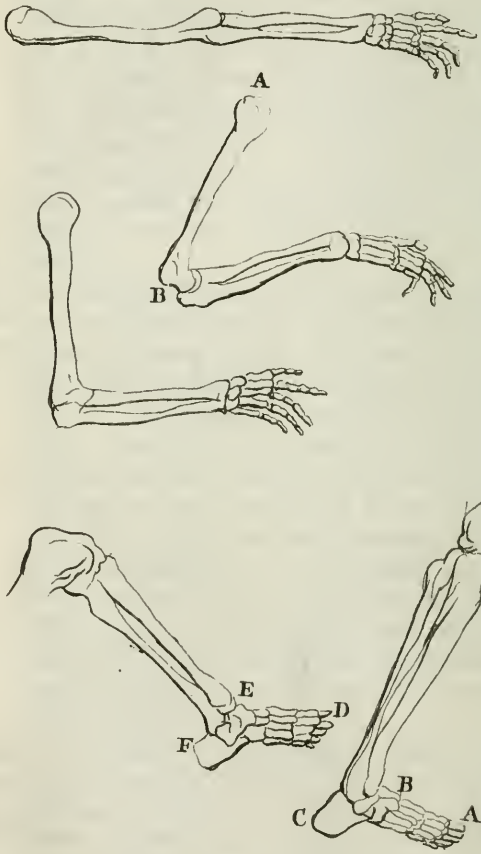
A
B
E
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A

when extended, is not equal to that of the ſame Arm, when contracted; it always loſing or gaining an eighth part of its Meaſure, as it is ſtretched out or drawn in. This ſhortening and lengthening of the Arm, is owing to the Bone between the Shoulder and the Elbow; which withdrawing out of its Cavity, when the Elbow is bent into an Acute Angle, [*as you ſee in the Figure A B*] adds to the length of that part of the Arm; and this Addition will be always the greater, as the Angle at the Elbow is more acute; and on the contrary, as the Angle at the Elbow grows more obtuſe, this part of the Arm muſt become ſhorter.

All the Parts of an Animal, muſt bear a ſuitableneſs and conformity to the whole: Thus where the whole Animal is thick and ſhort, each Member in particular, muſt be ſo too; where it is tall and ſlender, the Members muſt be tall and ſlender, likewiſe; and where it is of an ordinary Make, the Parts muſt appear ordinary in like manner. The ſame thing muſt be underſtood of Trees; thoſe formerly fell'd, being excepted out of the Number; becauſe theſe, in ſending forth new Cyons out of old Trunks, deſtroy their natural Form, and become, in effect, little better than ſo many vegetable Monſters. The Parts of an Animal to be made ſuitable to one another.

The Wriſt, or *Jonƈture* of the Hand and Arm, becomes ſmaller when the Hand is ſhut, and enlarges it ſelf as the Hand is opened; but the Arm, on all ſides, between the Elbow and the Shoulder, has a quite contrary effect; the Reaſon is this; that whereas in opening the Hand, the Muſcles which contribute thereto, being ſtretch'd out and extended, do render the Arm more ſlender between the Elbow and the Hand; in clenching it, theſe ſame Muſcles being ſwell'd Of the *Jonƈture* of the Hand with the Arm.

and enlarged, start off from the Bone, and by that means thicken and dilate the same part of the Arm.

Of the *Jonâture* of the Foot.

The Enlargement and Diminution of the *Jonĉture* of the Foot, is only seen on the nervous side, which increases when the Angle of the said *Jonĉture* is Acute, as in *D E F*; and decreases as that Angle grows more obtuse, as in *Fig. A B C.*

Of the Knee.

Among all the Members of a Human Body, whose *Jonĉtures* are capable of being bent; the Knee is that alone which loses of its thickness in bending, and becomes more Gross as it is stretch'd out more streight.

Of the Members of Nudities.

Naked Men employ'd in any laborious Work, or violent Motion, do only show such of their Muscles, as playing along the side of any moving Member, is the Occasion of its Action; the Muscles of each Member appearing more or less distinct and bold, as the effort it Exerts is more or less forcible.

Whence an Arm moves with the greatest violence.

Of two Arms, that will be moved with the greatest force, which being heaved out of its Natural Posture, receives the most powerful Assistance from the other Members to recover it self, and to drive it towards the Place whither it would go; thus the Figure *A*, heaves back its Arm with the Club *E*, to recollect it self with the greater Force, by the Concurrence of the rest of the Body, and to drive it with the greater Violence upon *B*.

Of the Motion of Man.

The principal part of Painting lies in the Art of making happy Compositions; The *Expression* is the next part in Dignity, and consists in giving each Figure the necessary Attention to what it is doing; and in making it show a briskness and vivacity suitable to its Character, and agree-

ble

front. p. 104

A

B

ble to the Action it is about, whether that be ſlow and heavy, or whether it require a greater ſhare of Activity, and Fire: Thus to throw a Dart, a Stone, or any the like projectile, let your Figure be ſeen in ſuch an *Attitude*, and have ſuch a Diſpoſition in all its Members, that its Intention may plainly appear: The two adjoyning Figures furniſh you with Inſtances of this kind; where their different Attitudes do plainly ſhow them engag'd in very different Actions. *A* ſhows the greateſt Zeal and Earneſtneſs, and aims a Dart, *B* appears more cool and languid, graſping a Stone; now *A* will certainly throw his Dart to a greater Diſtance, than *B* his Stone, becauſe though they both look the ſame Way, and ſeem to aim at the ſame Mark, yet in Effect, *A* makes the moſt reſolute Effort; for his Feet are turn'd on the ſide oppoſite to that where he meditates his ſtroke; ſo that in recovering himſelf, the Parts ſpring nimbly back to their Place, and diſcharge the Dart with incredible Velocity: On the contrary, the Figure *B* having his Feet, and the reſt of his Body in a natural Situation, acts at a Diſadvantage; ſo that its Motion is more feeble, and the Stone is projected with leſs violence; for it may be obſerved, that every *Impetus* or Effort in general, to have a forcible effect, muſt begin with violent Contorſions, and end in free, eaſy and natural Motions; thus a Sling, unleſs vehemently agitated it ſelf, gives but a languid Motion to the Body it projects; and thus an Arrow comes loitering out of the Bow, that is not vigorouſly drawn. Now the Figure *A* having launch'd his Dart, will find his whole Force exhauſted towards that Quarter; ſo that though he immediately acquire new Strength, yet that does only enable

enable him to recoil, and to make a Motion, contrary to that already made.

Of Attitudes, Members, and their Motions.

Never let the same Action be seen repeated in the same Figure; neither in the principal Members, nor even in those smaller and less considerable, as the Hands or Fingers; nor ever let the same Attitude be seen twice in the same History-piece; where the Subject requires a great Number of Figures, therefore, as a Battle, a Combat of Gladiators, or the like, there being but three ways of Wounding, *viz.* with the Push, the Cut, and the Back-stroke, it will be necessary to diversify these three manners as much as possible; for instance, if one of your Champions be seen dealing his Blows with his Back towards the Spectator, let his Fellow appear side-ways, and a third front-wise: still varying the same Action by the different Aspects of the Actors. In Battles, a compound Motion has always a very good Effect, and seems to animate and inflame the Subject. A compound Motion is that of a Figure, when at the same time it shows Motions, that appear to be contrary; as for Example, when a Figure shows the foreparts of its Legs, and at the same time, a part of the Body, by the Profile of the Shoulders: But of this we shall speak in its place.

The Motions of the Neck to be observ'd.

In the *Jonctures* of the Members, and their several Motions, take notice how the Muscles swelling on one side, sink and disappear on the other: this is particularly observable in the Necks of Animals, the Motions in that part being three-fold; two of which are simple, and the third Compound, partaking of each of the simple Ones; these, are one of them shown when the Animal inclines its Neck towards one Shoulder, and in bowing or raising its Head; the other appears when the Neck is turned either towards

towards the right ſide or the left, without bending, the Face looking over one of the Shoulders, and at the ſame time ſtanding upright: The Third, which we call the Compound Motion, happens when the bend of the Neck is diſtorted, the Ear being lowered towards one Shoulder, and the Face turned to the ſame Place; or towards the other Shoulder, the Face looking up to Heaven.

The Members to be made fit for their Office.

All the Members muſt appear in the exerciſe of that function, to which they were deſtined; for inſtance, in dead Bodies or in thoſe that are a ſleep, none of the Parts muſt appear alive or awake; thus the Foot which bears the weight of the Body, muſt be ſeen as if ſunk or ſqueez'd in, and not with its Toes free and diſingaged; excepting where the Figure is pitch'd upon its Heel.

Of the Motions of the Face.

The Motions of the Face, occaſioned by ſudden Agitations in the Mind, are very numerous; the chief are Laughing, Weeping, Shrieking, Singing in ſeveral Tones, ſhowing Amazement, Wrath, Joy, Sorrow, Fear, Vexation, Grief, and other the like Motions; all of which we ſhall have occaſion to conſider hereafter: As to Laughing and Crying, the Motions they produce in the Face, are very much alike, and the Characters they impreſs on the Mouth, Cheeks, and Eye-lids, not to be diſtinguiſhed. Their only difference appears in the Eye-brows, and in the ſpace that ſeparates theſe from each other, and ſhall be conſidered more at large, when we come to treat of the Motions happening in the Face, Hands, and other Members under any ſudden ſurprize. The Knowledge of theſe Motions is of the laſt importance to a Painter, and his Figures without this will be dead in a double capacity;

city: Let him beware however, of the other extreme; nor ever make their Motions so affectedly animated, as to represent the Ferment of a Battle in a Scene of calmness and composure, or the Fury of a Bacchanal, or fantastick gestures of a Harlequin in a Subject which requires Sobriety and Peace. Observe further, that those whom you introduce as present at the Action you exhibit, be attentive to what passes, with Countenances and Behaviour, full of Admiration, Reverence, Grief, Distrust, Fear, or Joy, as shall be most suitable to the Subject, and to the Persons forming the Assembly.

Observations for the Designing of Faces.

The Bone and Cartilage which compose the Nose, may be varied Eight different ways, which Form as many different kinds of Noses; for either they are equally streight, equally concave, and equally convex, which is the first kind; or they are streight, concave, and convex unequally, which is the second; or the Parts above are streight, and those below concave, which is the third sort; or those above are streight, and those below convex, and this is the fourth sort; or else they are concave above, and streight below, and this is the fifth; or concave above, and convex below, which makes the sixth; or lastly, they are convex above, and streight below, which is the seventh; or convex above, and concave below, which is the eighth kind. The setting on of the Nose to the Eye-brows, admits but of two different Forms, for it is always, either concave or streight. The Forehead is capable of three various Shapes, being either plain, concave, or convex; the plain is again divided several ways, for it is either hollow towards the top, or towards the bottom,

or it is ſo, both at top and bottom; or elſe it is plain and uniform, both at top and bottom.

In order to retain the Air of any Man's Face, whom you chance to ſee, apply your ſelf to the Study and Obſervation of the ſeveral different Faces which preſent themſelves before you; always taking eſpecial notice of thoſe parts which diſtinguiſh one Man from another, and which contribute the moſt, towards that infinite and amazing variety ſo obſervable in the Species; theſe parts, are the Mouth, Eyes, Noſe, Chin, Neck and Shoulders: The Noſe, for inſtance, admits of ten different Shapes, and is either ſtraight, crumpt, hollow, rais'd above, or below the middle, Aquiline, flat, ſharp, or round; all which, appear with the greateſt advantage when ſeen ſide-wiſe: Of Noſes proper to be ſeen front-wiſe, there are twelve other kinds; even, big in the middle, ſmall in the middle, big about the tip and ſmall in the ſetting on, ſmall at the tip and big at the ſetting on, Noſtrils wide, narrow, tall, low, the *Foramina* open, or covered with the peak of the Noſe. Thus every other part, how minute ſoever, will afford ſomething particular for your Obſervation, all which being view'd with the neceſſary attention, will enable you afterwards to *Deſign* them from your Ideas. If this method be not altogether to your taſt, you may obſerve that which follows: Carry always a little Pocket-Book with you, full of various *Deſigns* of the ſeveral parts juſt now mentioned; and when you find a neceſſity to retain any Man's Air, obſerve his Face very nicely, taking all his Features aſunder, and conſidering them Piece-meal; remembring ſtill as you go along to caſt an Eye over your Collection, and to match the natural parts

A Method of remembering Faces,

parts of the Face with the Artificial ones in the Book; putting a mark on such of the latter as come neareſt the former; to be afterwards join'd together at your Lodgings.

Of the Beauty of a Face.

Never let the Muscles in the Face be too bold, or terminate too abruptly; but take care that the Lights be sweet, and that they lose themselves insensibly in soft and pleasing Shadows; for upon your conduct in this point, depends all the Grace and Beauty of the Face.

Of the Equilibrium of Figures.

The Hole of the Neck between the two *Clavicles*, must hang perpendicularly over the Foot that bears the Body; if an Arm be stretch'd out, the Hole quits its perpendicular, and if a Leg be thrown backwards, the same Hole advances forwards; so that in every new *Altitude* it gets a new Situation.

The Motions of a Figure to express the Sentiment of its Mind.

A Figure whose Motions are not perfectly accommodate to the Sentiment or Passion it is supposed to have, shows its Members to be in a State of Rebellion, and to want that Duty and Allegiance which they owe to the Mind: There must be a great deal of Zeal and Application, therefore, express'd in the Behaviour of a Figure, and its Action must be so proper and peculiar to the Subject, that it cannot possibly serve to signifie any other thing, nor be used on any other occasion, than that it is intended for.

How to touch the Muscles of a Nudity.

In Naked Figures those Members must show their Muscles the boldest and most distinct, upon which the greatest stress is laid; and that these may have the better effect, observe not to distract the attention of those who view them by too great a multiplicity; only showing the Muscles of such Members as have the most considerable share in the Action exhibited; in comparison

B

C

pariſon with which, the reſt muſt appear lax and ennervate.

A Man either in running, or in a moving a more gentle pace, muſt ſhow that part which is over the Leg ſupporting his Body, lower than the other. A Remark on the Motion of a Man.

The Shoulders or Sides, of Men and other Animals, will have the greateſt differeuce in their height, when the whole Body is found in the moſt leiſurely Motion; and on the contrary, theſe parts of the Animal will come neareſt to an equality in height, when the Motion of the whole Body is the quickeſt: This has been already proved in my Treatiſe of Local Motion, upon this principle; that every heavy Body gravitates in the Line of its Motion; ſo that if any Whole be moving towards any place, the part which is join'd to it, follows the ſhorteſt Line of the Motion of its whole; without throwing its Weight on the Lateral parts of the ſame Whole. Of the different heights of the Shoulders obſervable in Animals when in Motion.

'Tis objected againſt the firſt part of what I have ſaid, that it is by no means neceſſary, that a Man walking ſlowly, or ſtanding ſtill, ſhou'd preſerve a continual *Equilibrium* of parts upon the Centre of gravity ſupporting the weight of his whole Body; but on the contrary, that he is frequently ſeen bending on one ſide, even when the weight of his Body does wholly reſt upon one Foot; and that at other times, he diſcharges part of his weight upon the Leg which is not ſtraight, that is, on that bent at the Knee, as is ſeen in the two Figures *B* and *C*: In anſwer to which, I aſſert that what is not done by the Shoulders of *C*, is done by its Haunches; and that it at once preſerves its own *Equilibrium*, and verifies my principle. Objection.

The

The stretching out of an Arm changes the *Equilibrium* of the Body.

The stretching out of an Arm, drives the *Equilibrium* of the Body, into that Foot which sustains the whole weight; as is seen in those, who with Arms stretch'd out can walk upon a Rope, without the use of any Pole as a Counterpoise.

Of the Centre of Gravity in Animals.

Every Animal will have the Centre of its Legs, on which it rests, so much nearer the perpendicular of its Centre of Gravity, as its Motion is more slow; and on the contrary, the Centre of its Legs will be further removed from the perpendicular of its Centre of Gravity, as it is more quick and nimble in its Motion.

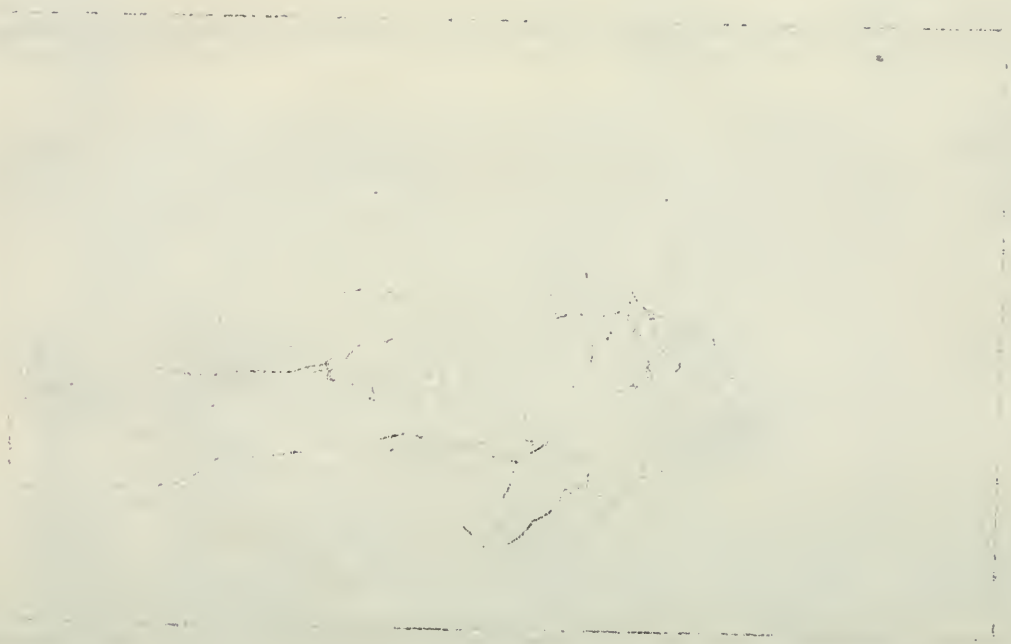
Of a Man bearing a Burthen on his Shoulders.

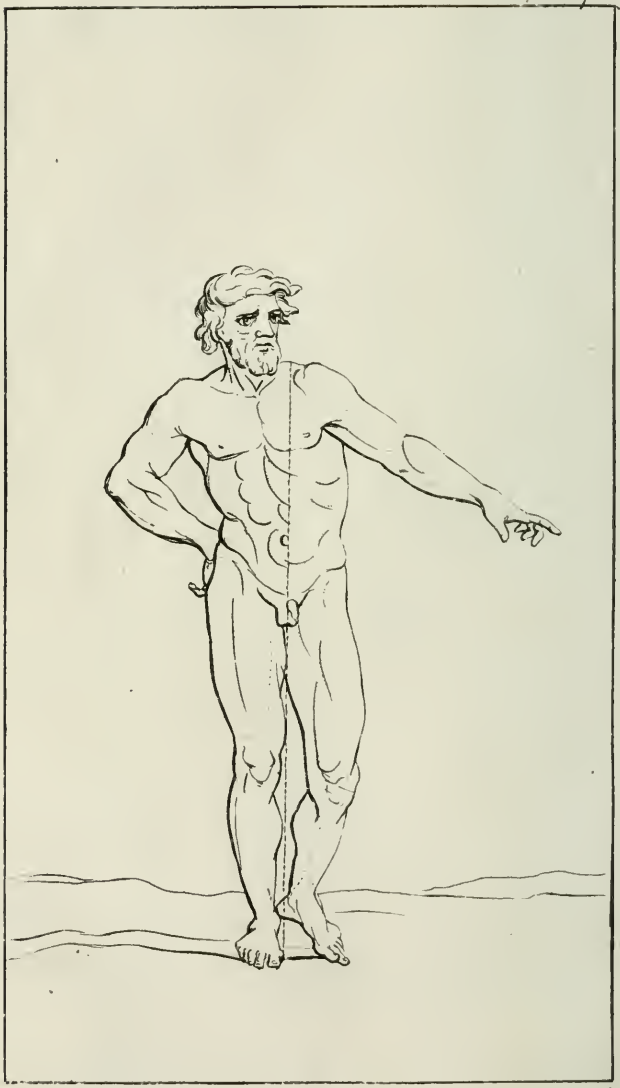
A Man in bearing a Burthen, has always the loaden Shoulder higher than the empty one: An Instance of this, you have in the following Figure, wherein the Central Line of the Weight, both of the Man and his Burthen, passes through the Leg which sustains the whole; were it not for this, and did not the Weight of the Body, and of the Burthen, by being equally shared, thus make an *Equilibrium*, the Man of necessity must tumble to the Ground: Now, to this it is requisite, that so much of the Weight of the Body, be thrown on the side opposite to that which bears the Burthen, as may make it a Counterpoise to the other; and this can be no other way done, but by the Man's bending on that side not laden, till such time as it comes to bear its share of the additional Load, laid on the other. And this is the Expedient, which Witty, Inventive Necessity, has recourse to on these Occasions.

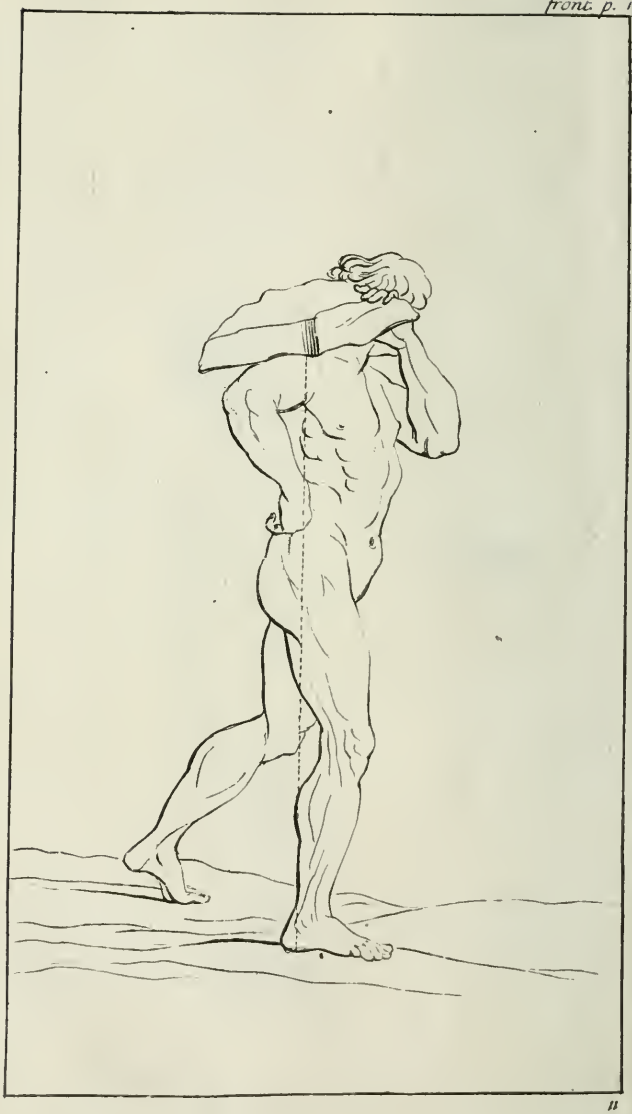
The *Equilibrium* of a Man, when standing on one Foot.

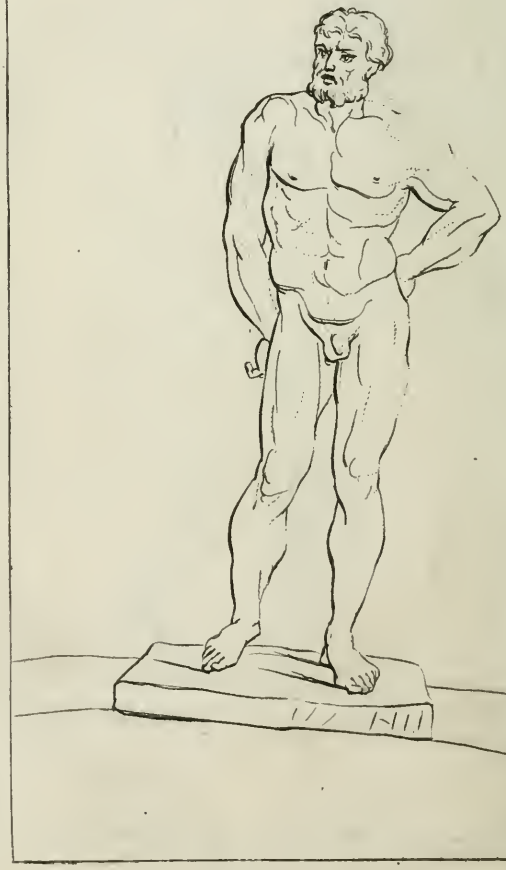
The Weight of a Man who rests only upon one Leg, is always equally distributed on both sides of the Central, or Perpendicular Line, which supports him.

A Man









A Man, in Walking, has the Centre of his Gravity, over that of the Leg, which is set on the Ground. Of a Man Walking.

Rest, or Privation of Motion in any Animal, arises from the Equality, or Privation of Inequality, between the opposite Weights; which, as they occasion it to move by their Inequality, so they keep it suspended, and at rest, by their Equality. Of the *Equilibrium* of an Animal standing on its Feet.

That side of the Body, on which a Man bends, is diminished, in proportion as the Opposite side is increased; and the bending or flexure of this side, may, at last, come to be in a Subduple *Ratio* to the stretching of the other. But this shall be considered in a particular Treatise. Of the Bends and Turnings in the Body of Man.

As much, as one side of any flexible Member is lengthen'd; so much its opposite one is shortened: But the Central Line, being without the side that is not bent, in a Member that is, never gains, or loses of its Length. Of the Flexures or Bends of the Members.

Every Figure, in sustaining any foreign Weight out of the Central Line of its own Magnitude, casts so much of its own, or of the foreign Weight on the opposite side, as serves to make a perfect *Equilibrium* about the Central Line, which passes through the whole Mass, and terminates, on that Foot set on the Ground. Thus, in bearing a Burthen with one Arm, we see a Man naturally stretch out the other from him; and that, not proving a Counterpoise, he further bends his Body the same way, till he has cast so much new Weight on that side, as suffices to resist the Load imposed on the other. We further observe, that a Man ready to fall on one side, never fails to stretch out the other to recover himself. Of the *Equilibrium*, or Counterpoise of the Body.

Different Ways of moving the same Weight.

To represent a Man moving a Burthen, consider that the Motion may be made in different Lines; *viz.* either from below upwards, with a simple Motion, as in heaving a Weight from the Ground; or from behind forwards, as in drawing a Weight after him; or simply forwards, as in shoving any thing before him: Or, Lastly, From above downwards, as in pulling at a Rope which plays in a Pully. Here it must be remarked that the Weight of a Man's Body draws so much the more, as the Centre of his Gravity is further distant from the Centre of the Axis which sustains him: To this, you must consider the Effort wherewith the Reins, and Legs, when bent, strive to recover their Straightness; and that a Man neither Ascends, Descends, nor Walks in any other Line whatever, without drawing up the Heel of the hind Foot.

All Motion produced from the loss of the *Equilibrium.*

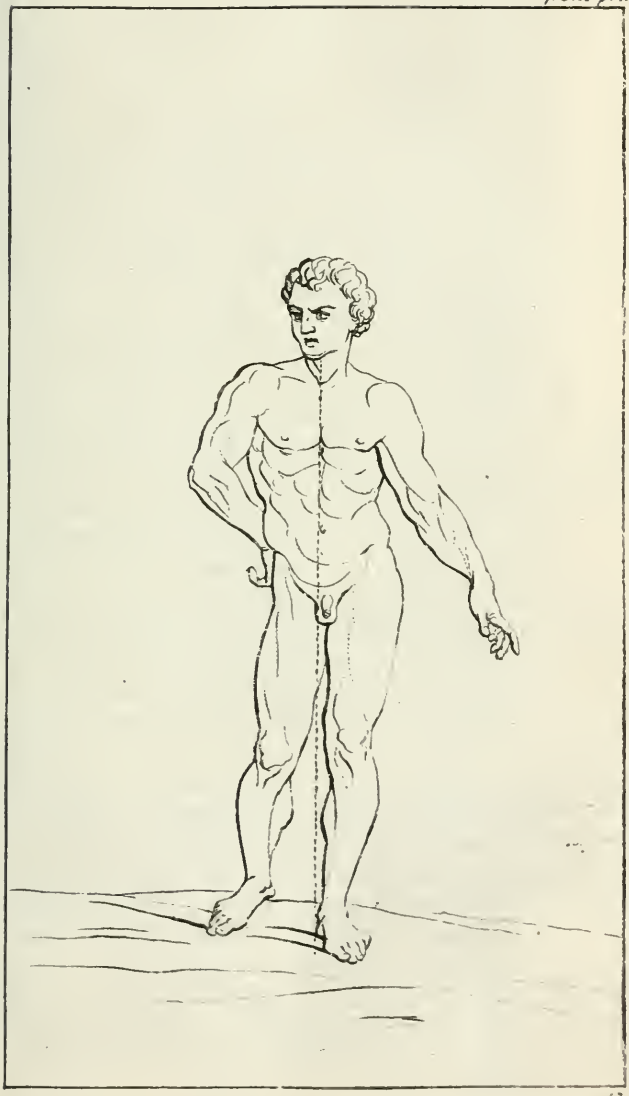
All Motion, proceeds from a loss of *Equilibrium*; that is, of Equality, or Ballance; This must always cease e'er Motion can commence; and ever the further any body is remov'd from its *Equilibrium*, the quicker and more violent is its Motion.

Of the *Equilibrium* of a Figure.

A Figure standing on one of its Feet, will always have the Shoulder of that side lower than the other; and the Hole of the Neck, at the same time, perpendicularly over the middle of the Leg which supports the Body. This will be the Case, in whatever Line the Figure be seen; whether its Arms be but little advanced from the Body; whether it be free of any Burthen on its Back, its Shoulder, or its Hand; or whether the Leg out of Office, be not far detached from the Body, either forwards or backwards.

Of the gracefulness of the Members.

The Members of a Body, must be so managed, as that they may produce the Effect, intended, by the Figure, in the most graceful Manner: Thus



B

Thus, in repreſenting a Figure that may appear noble and generous, obſerve that its Members be ſlender and genteel, the Muſcles not too bold and apparent, but even thoſe which Neceſſity requires to be ſeen, touch'd with Softneſs and Delicacy; the Members, and eſpecially the Arms, muſt not appear ſtiff and obſtinate, that is, they muſt not be ſtretch'd out in right Lines with the others Members to which they are joyn'd; and if it be found neceſſary, on account of the Poſition of the Figure, that the right Haunch be ſeen higher than the Left, let the left Shoulder be higher than the Right; and let its *Jonćture* hang perpendicularly over the moſt elevated part of the Haunch: Let the Hole of the Neck, be always directly over the middle of the *Jonćture* of the Foot on which the Figure reſts; and let the Leg which does not ſupport the Body, have its Knee lower than the other Knee, and drawn near the other Leg. As to the Attitudes of the Head and the Arms, they are infinite, and therefore not to be brought within the Compaſs of Rules: All I think neceſſary here to intimate, is, that they muſt be Free, Natural and Various; and that without theſe Qualifications, the Members will appear no better than ſo many Pieces of Wood.

Of the Diſpoſition of the Members, in turning the Body round.

With regard to the Diſpoſition of the Members, obſerve that in repreſenting a Perſon turning, either backwards, or aſide, you never ſhow his Feet, and the other Members directed the ſame way with the Head; but let them rather ſhare the Action among them, and form a kind of *Contraſt*, or Contrariety in the four Principal *Jonćtures*; which are thoſe of the Feet, the Knees, the Haunches, and the Neck: So that if the Figure ſtand on its Right Leg, let the

Left Knee be bent, and drawn backwards; its Foot a little rais'd, and spread outwards; and the Left Shoulder somewhat higher than the Right: Let the Nape of the Neck be turn'd directly over the outer Ankle Bone of the Left Foot; and the Left Shoulder hang perpendicularly over the Toe of the Right Foot. Further, let it be a standing Rule with you, never to turn the Head of your Figures the same way with the Breast; Nature having so contrived the Neck, that it turns with ease, on every occasion of looking around us: Lastly, to represent a Man sitting, and at work with his Arms, upon any thing side-wise of him, remember that his Stomach be turn'd over the *Jonkture* of the Haunch.

How to dispose the Members of a single Figure.

In a Figure which you represent alone, observe, that no two Members, ever appear to have the same Motion: For instance, if your Figure be seen running by it self, let not both its Hands be thrown forwards, but if one be before, let the other come behind; for without this Disposition, it will never be believ'd that it runs: If the right Foot be advanced the foremost, let the right Arm lag the hindmost; since without this *Contrast* of parts, and this contrariety in their Motions, a Man never runs well, and with advantage. If another Figure be introduced following the first, with one of its Legs advanced a little forwards, take care to bring the other Leg underneath the Head; and on the contrary, let the Arm of the same side, be reach'd out the foremost. Of this we shall speak more at large in our Treatise of Motion.

The most important parts of the Figure.

Your principal care in *Designing* a Figure, must be, to set the Head well on the Shoulders, the *Busto*, or Trunk upon the Haunches, and the Haunches and Shoulders upon the Feet.

A Fi-

A Figure ſtanding firm on its Feet, makes an *Equilibrium* of all its Members, around the Central Line, on which it is ſuſtain'd. A Figure therefore, thus ſteady, and thus balanced, ſtretching one of its Arms out from the Body, muſt at the ſame time ſhift ſo much of its weight to the oppoſite ſide, as is equal to that of the extended Arm: This muſt be underſtood of every part in general, ſallying out beyond ordinary, from its whole. How a Body preſerves its *Equilibrium*.

A Man will never be able to lift a Burthen, till he lays a weight of his own, greater than that of the Load he wou'd lift, in oppoſition thereto. How a Figure lifts or bears a Burthen.

The *Attitude* of a Figure, muſt be ſo conducted in all its parts, as that the intention of the Mind, may be ſeen in every Member. Of the Attitude.

The Actions expreſs'd in the Figures of Men, muſt be as various, as are their Ages and Qualities; nor muſt even the Sex be over look'd, but both Male, and Female have their different *Attitudes*. Difference of Attitudes.

A Painter ſhou'd remark the *Attitudes*, and Motions of Men, ſpringing immediately from ſome ſudden accident; and fix them well in his Memory, or Sketch them ſlightly on the ſpot. This will be infinitely better, than to wait, till ſome Perſon, mimick; for inſtance, the Action of weeping, without any real occaſion for Tears. For ſuch an Action having no natural cauſe, the effect muſt of courſe be conſtrained, and unnatural. It will, however, be ſerviceable to you in the higheſt Degree, after having obſerv'd the Circumſtances of ſome natural Action, to diſpoſe a *Model* in the ſame Attitude: This will aſſiſt your Imagination, and you will be enabled to How a Painter may attain to give ſuitable Attitudes to his Figures.

Paint from it, both with the greater Ease, and Spirit.

Of the Actions of those present at any remarkable Event.

Those who are present at any remarkable Transaction, express their Admiration in different Manners; as for instance, in the Execution of Criminals: Where 'tis a matter of Devotion, those who attend, cast their Eyes on the Object, with various expressions of Zeal, Resignation, and Piety; as at the elevation of the Host during the Mass, and other the like solemn occasions: Where the Subject is of such a kind, as either to provoke Mirth and Laughter, or Sorrow and Compassion, 'tis not necessary that the Spectators shou'd all turn their Eyes towards the Object; but they ought to appear with different Emotions; and it may be convenient in this case, to distribute them into several *Groups* of Persons, assembled together to vent their Passions, either by Laughing, or Lamenting with each other: Where 'tis a Subject that inspires Terror and Affrightment, those who are seen flying, must appear Pale and Aghast, with different expressions of Fear, and Astonishment; their flight must be disorderly, and precipitate, but differently Characteriz'd; as we shall have occasion to observe in our Treatise of Motion.

A Rule in Painting a Nudity.

A Figure, of a slender delicate Shape, must never have its Muscles too bold, and prominent; for Men of this Make, have never much Flesh on their Bones, their slenderness arising from the Want of it; and where there is but little Flesh, the Muscles can never have much *Relievo*.

Whence the Muscles become thick and short.

Muscular Men, have large Bones, are short, and thick in their Shape, and have but little Fat; the reason is, that the Fleshy Muscles in growing, entangle one with another; so that the Fat which

which ſhou'd inſinuate it ſelf between them, finds no room: Now the Muſcles in thoſe Bodies which are unfurniſhed with Fat, being contiguous, and unable to dilate themſelves, confine their Growth to their thickneſs; ſtill growing the moſt, in that part which is the furtheſt removed from their extremes; that is, towards the middle of their Length and Breadth.

Fat Men never have Groſs Muſcles.

Tho' Fat Men, have this in common with Muſcular Men, that they are frequently thick and ſhort; yet are their Muſcles always ſmall and ſlender: Now, their Skin covering a great deal of ſoft, ſpungy Fleſh, replete with Air; it comes to paſs, that Fat Men ſwim better, and ſupport themſelves with more eaſe upon the Water, than thoſe who are thinner, and more Muſcular; the Fleſh of theſe latter, being more Solid, and Including leſs Air than that of the former.

As the Arms are lifted up, or lower'd, the Breaſts diſappear, or become more Prominent; and as the Haunches are bent, either outwards or inwards, their *Relievo*'s undergo the ſame viciſſitude; further, the Shoulders, the Haunches, and the Neck, are more variable than any other *Jonctures* of the Body; their Motions being more numerous and diverſified than thoſe of any other part: But of theſe, I propoſe a particular Treatiſe.

Remarks on the Muſcles.

The Members of Young People, ought never to have their Muſcles too ſtrong and prominent; that being one of the Characteriſticks of Maturity and Manhood, to which Youth is not yet arrived: The Muſcles, however, muſt be touch'd with more or leſs Force, as there is a greater or leſs ſtreſs laid on them; thoſe ſeen to make any vigorous Effort appearing Groſſer and more In-

flated, than the others which are out of Action. By the way, let it be observed, that in Members which are bent, the central Line within-side, does never retain its natural Length.

A Nudity whose Muscles do all appear, must be without Motion.

A Nudity whose Muscles do all appear bold, and evident, ought to stand steady and without Motion; it being impossible that the Body shou'd stir the least tittle imaginable, unless one part of the Muscles, be relax'd, while their Antagonist Muscles are in Action: And 'tis evident, that the slacken'd Muscles must subside and disappear, in Proportion, as the others distend and discover themselves.

The Muscles of a Nudity never to be too exact and laboured.

In painting a Nudity, be not too rigid and exact in marking the Muscles; that being not only tedious and troublesome in the Execution, but even displeasing to the Eye when effected: remember further, to make them the most visible on that side of any Member which it puts forwards to Action; the nature of a Muscle being such, that in working, its Parts assemble, and unite themselves together; several of them, by this Means, discovering themselves, which before were unperceiv'd.

Of the Extensions and Shortenings of the Muscles.

The Muscle behind the Thigh, shows a greater Variety of Extensions, and Contractions, than any other Muscle in the Body; the next after this, is that which forms the Buttocks; the third is that of the Chine; the fourth that of the Throat; the fifth that of the Shoulder; and the sixth that of the Stomach; which last, has its rise under the Paps, and terminates under the Groin.

The Ligament of the Wrist, without any Muscle.

In the Wrist of the Arm, about three Inches from the Palm of the Hand, is found a Ligament, the largest which is without a Muscle, of any in the Human Body. It has its Rise in the middle

of

of one, of the * *Fucils* of the Arm, and terminates in the middle of the other *Fucil*: its form is Square, its breadth three Inches, and its thickneſs one and an half. Its uſe being to keep cloſe the Muſcles of the Arm, and to prevent them from flying off in right Lines, when the Arm is Contracted.

Little Bones formed in the Ligaments of ſome of the *Jonctures*.

In ſome of the *Jonctures* of the Body, are found little Bones, fixed in the middle of the Ligaments, with which theſe *Jonctures* are bound together: Theſe are found in the Knees, the Shoulders, the Breaſt, and the Feet, and are in Number eight; *viz.* in each Shoulder one, as many in each Knee, and two in each Foot, under the firſt *Jonćture* of the great Toe, towards the Heel: And let it be obſerved by the Way, that theſe Bones always grow extremely hard, as the Perſon draws near to Old Age.

Of the Muſcle between the Breaſts and the lower Ventricle.

The Muſcle, which riſes between the Breaſts, and the lower Ventricle, or rather, which terminates in the lower Ventricle, is found to have three Powers; being divided length wiſe by three Ligaments, into ſo many Parts; the firſt is the upper Muſcle, which is followed by one of the Ligaments, as large as it ſelf; below, is a ſecond Muſcle, joyn'd to a ſecond Ligament; and laſtly, comes the third Muſcle, with the third Ligament, which is faſtened to the *Os Pubis* of the lower Ventricle: This Partition of the Muſcle by the ſeveral Ligaments, is a Proviſion, which Nature has made, on account of the great Motion happening to the Body, when bent or diſtended, by means of this Muſcle; ſince, had the Muſcle been all of a Piece, it would have

* By the two *Fucils*, the Author means no more than the Radius and Cubitus of the Arm.

had

had two great an Effect, and would have produced too great a Variety of Contractions and Dilatations, in prejudice to the Shape of the Body, which is more Beautyful, as the Motions of this Muscle are less apparent: For if it be required, that the whole Muscle, dilate it self nine Inches; and that it afterwards contract it self as many; In this Case, each of the three Divisions, having but three of the Nine to dilate, their natural form will not undergo any great Alteration; and consequently, the general Beauty of the Body, cannot hereby suffer any sensible Diminution.

The greatest Contorsion of a Man, in looking at his hind Parts.

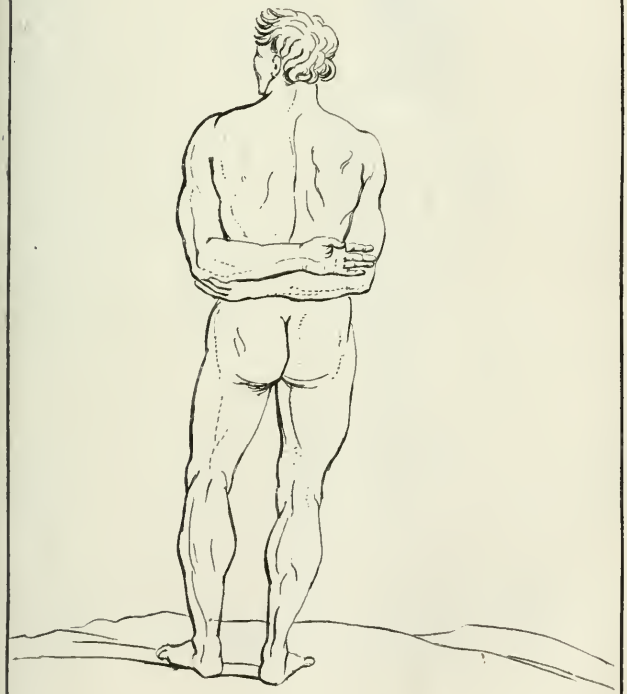
The utmost Degree of Contorsion, to which a Man in viewing his hind Parts is able to reach, is, to have his Face look perpendicularly down upon his Heels: And this is not done without great Difficulty; since, besides the Flexure of the Neck, the Legs are likewise to be bent, and the Shoulder, over which the Head reclines, to be depress'd.

How near the Elbows may be drawn together behind the Back.

When the Arms are extended behind the Back, the Elbows stand at the same Distance from each other, that is found, between the Elbow and the end of the long Finger; that is, the Elbows at their nearest Approach in this Disposition, are just removed from each other, the Space, that is between the Tip of the middle Finger and that of the Elbow; the two Arms in this Situation, forming a perfect Square: And the furthest reach of the Arm across the Stomach, is then seen, when the Elbow is found in the middle of the Stomach; so as that the Elbows, the Shoulders, and the Arms, form an Equilateral Triangle.

Of the Disposition of the Members, when a Man is preparing to strike with Violence.

A Man disposing himself to deal some violent Stroke, bends, and turns from the Mark at which he aims, with a Motion, contrary to that wherewith he intends to strike; where, collecting



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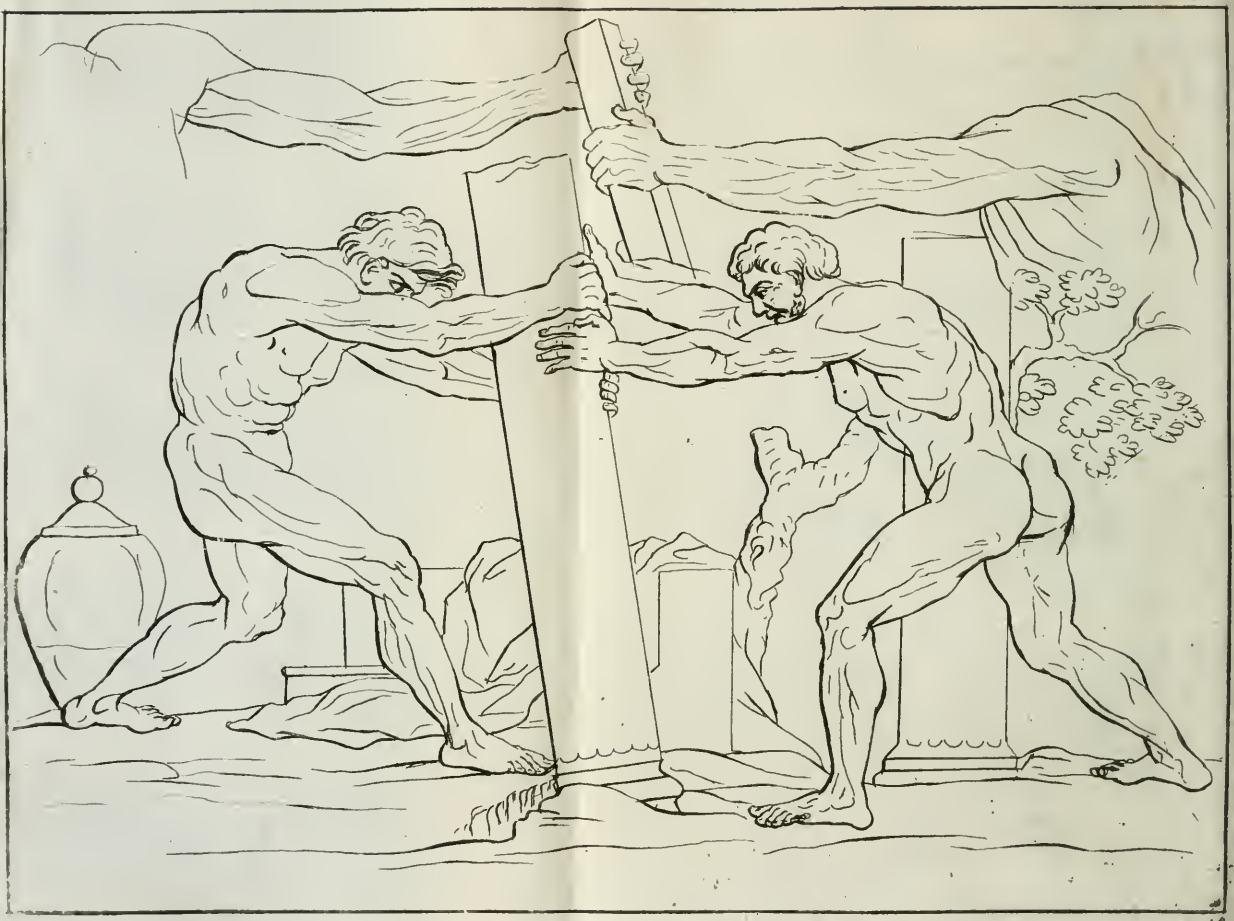


ing all his Force, he lets it fly; and discharges it on the Body that he hits, with a compound Motion, form'd out of that of the Arm, and of the Weapon that he holds.

Of the Force of the Arms.

The two Muscles which serve to move the larger *Fucil* of the Arm, have their Origin near the middle of the Bone named *Adjutorium*, one behind the other; the Office of the hindmost being to stretch the Arm, and that of the other to contract it.

Now, to find which is the greatest Force, whether that wherewith a Man pulls towards him, or that wherewith he trusts from him; it must be observed, that in my Treatise *De Ponderibus*, I have already prov'd, that of two Weights equally heavy, that will have the greatest Force, which is the farthest removed from the Centre of its Ballance; whence it follows, that *NB* and *NC* being two Muscles of equal Power; *NC*, which is before, will have a greater force, than the other *NB*, which is behind; inasmuch as it is fastened to the Arm in *C*, a place further removed from the middle of the Arm, or from the Elbow *A*; than *B*, which is just off the middle it self: So that the Point is now determined. This however, is but a simple Power: The compound Power being what I now proceed to consider; by a compound Power I mean that, which a Man exerts, when to the Action of his Arms, he adds some other secondary Force, as the Weight of his Body, or the effort of his Legs and Reins; An instance of this Power is shewn in the adjoyning Figures; which are seen to struggle, the one to thrust, and the other to pull down a Pillar; each to that end, making a joynt effort with his Arms, Reins, and Legs.

The

In which Action a Man has the greatest Strength, whether in thrusting or pulling.

The Force wherewith a Man pulls towards him, is considerably greater than that wherewith he thrusts from him. The Reason is, that in pulling, the Muscles of the Arm, which are of no use in thrusting, joyn their Powers with those of the other Muscles, which serve indifferently in thrusting or pulling, and augment their Force; whereas, in thrusting, the Arm being stretch'd out straight, the Muscles which give the Elbow its Motion, are of no use in the Action; making no effort, beyond what would be made by the Shoulder, if lean'd against the Thing to be moved: so that as there are no Tendons, nor Muscles, found to contribute towards that Effect, excepting those, which when the Reins are bowed, or the Legs bent, serve to reduce them to their Straightness again, and which lie under the Thigh, and in the Calf of the Leg; it follows, that there being a greater Number of Powers, which conspire, and act conjunctly in pulling, than in thrusting, the Arms, the Legs, the Back, and even the Stomach, (as the Body is more or less bent,) contributing to the former, and the force of the Arms being to be omitted, in the account of those acting in the latter; the Action of pulling, must carry with it a greater Power, than that of thrusting: For it must be remembred, that tho' the same parts of the Body, concur to the one and to the other, yet, that the Action of the Arms is without Effect in thrusting; the Arm which is then stretched out straight, and without Motion, being just equivalent to a stick, interposed between the Shoulder, and the thing to be thrust.

Of the Flesh around the Jonctures which are bent.

The Ligaments wherewith the *Jonctures* of the Bones are covered, together with other things, incompassing or adhering to these Bones, swell and subside,

ſubſide, in proportion as the reſpective Members are bent, or extended; that is, they ſwell, and dilate withinſide the Angle, formed by the bend of the Members, and at the ſame time, are ſtretch'd, and lengthen'd without ſide the ſaid Angle of the Bend: the middle parts found in the bend, or between the outer or inner Angles, partaking of the Diminution of the one, or Dilatation of the other; but in a greater, or leſs Degree, as they are nearer, or more remote from the ſaid Angles of the *Jonćture*.

The Leg, cannot poſſibly be moved, either to the one ſide or the other, without turning the Thigh at the ſame time: This is owing to the Structure of the Knee; for the Bone of the Thigh, and that of the Leg, being inſerted and fitted into each other, the *Jonćture* is at liberty to play backwards and forwards, ſo far, as is neceſſary in walking, kneeling, and the like; but is utterly incapable of any lateral Motion, by the very nature of the Articulation. Now if this *Jonćture* were flexible on every ſide, like the *Os Adjutorium* in the Shoulder, or that of the Thigh, where it is joyn'd to the Haunch; the Legs wou'd be in a Condition to be moved ſidewiſe, as well as backwards, and forwards; and wou'd uſually be found a-croſs and twiſted, to the no ſmall hindrance of the Man and his Motions: Further, this *Jonćture* can only be bent forwards, ſo far as to ſtraighten the Leg, and to ſet it into a Right Line with the Thigh; nor is its flexure backwards unlimitted; ſince, if it were, a Man once down on his Knees, wou'd never be able to raiſe himſelf upon his Feet again: For, in order to recover himſelf from this Poſture, we find, that in the firſt place, he diſcharges the Weight of his Body upon one Knee, and

The Leg not to be turned ſidewiſe, without the Thigh.

and by that means, eases the other; so that the other Leg, not being charged, with any Weight but its own, easily raises the Knee, and steps its Foot on the Ground; This done, he returns back his whole Weight upon this Foot, by resting his Hand upon his Knee, and heaving up his Arm, and with that, his Head and Chest towards the other side; being now at liberty to distend the Thigh, and to straighten it into a Line with the Trunk, he raises himself upright on the Foot placed upon the Ground; till, by that means, he erects the other Leg, and sets it to its fellow.

Of the Wrinkles in the bend of a Jonćture.

The Flesh, in the bend of a *Jonćture*, is always Wrinkled, on that side towards which it is bent.

Of simple Motion.

A simple Motion, is that which a Man makes, in bending simply either backwards, or forwards.

Of compound Motion.

A compound Motion, is that which a Man performs, when on any Occasion, he bends both downwards, and sidewise at the same time. And here it may not be impertinent to advertise the Painter, to persue his compound Motions; and to make them appear, quite through the Piece he is Painting: That is, having given any of his Figures, a compound *Attitude* suitable to the Subject of his History; let him never weaken its Force, or Expression, by accompanying it with the simple Motion of some other Figure, less attentive to the matter in Hand.

Of the Motions suitable to the Action in which a Figure is employ'd.

The Motions of your Figures, must always show that Degree of Strength, which they may be rationally supposed to employ in their Respective Actions; that is, a Man in lifting a Stick, ought never to exert the same Effort, which wou'd be necessary to heave a Beam: Remember, therefore, to proportion their several Efforts, to the Quality of the Work, and the Weight of the Burthens they bear.

Never

Never let the Heads of your Figures, be ſeen erected, juſt in the middle of the Shoulders; but always a little turned, either to the Right or the left. This muſt be obſerved, even where they are looking up, or down, or even ſtraight forward; it being abſolutely neceſſary, that they ſhould have ſome *Attitude*, to ſhow ſomewhat of Vivacity, and to make it appear that they are neither Dead, nor Aſleep. Further, Never *Deſign* a Figure entirely either in *Profile*, in Front, or even on its Backſide; ſo as that the middle Parts, be ſeen rang'd perpendicularly over one another; At leaſt, if any particular Circumſtance ſhould make this unavoidable; Remember that it be done in the Figures of Old Men; it being much more tolerable in theſe, than in any others, on Account of their natural Dullneſs, and Inactivity. Laſtly, Never forget your ſelf ſo far, as to repeat the ſame Action of the Arms, or Legs, either in the ſame Figure, or even in thoſe around it: With this Proviſo, however, that there be no particular Circumſtance in the Subject, that may make it neceſſary. Of the Motions of Figures.

In a Piece, where a Figure is repreſented ſhowing, or pointing with its Hand, at any thing not far removed, either in Time or Place; obſerve, that the Arm be not too much extended, nor the Hand that Points, at too great a Diſtance from the Perſon who Directs it. But where the Thing pointed at, is far removed, then muſt the Arm be likewiſe far ſtretch'd out, and the Hand ſeen at a good Diſtance from the Body; the Face of him that Points, being at the ſame time turned, towards him for whoſe Sake that Action is intended. Of the Geſture of a Man pointing at any thing.

The Air of Men's Faces, muſt be varied according to their various Circumſtances, and according Of the Variety of Faces.

cording to the various Accidents that befal them; in Working, Resting, Weeping, Laughing, Crying, being seiz'd with Fear, or moved with any other Passion; and let it be further observed, that every Member of the Figure, together with its whole *Attitude*, must have a natural Connexion, and Correspondence with the Passion expres's'd in the Face.

Of the Motions suitable to the Intentions of Figures.

Of the Motions of the Soul, some are attended with Actions in the Body, and others are without any. Such as are unaccompanied with any Action of the Body, let fall the Arms, the Hands, and all the Parts which at other Times are the briskest and most active; On the contrary, those Motions of the Soul attended with Actions of the Body, animate the Members, and dispose them into Attitudes, correspondent to the Idea or Intention of the Mind. But this is a Subject which must be considered by itself: There is further, a third kind of Motion, partaking both of the one and the other; and a fourth, perfectly different from them all. These two last Kinds, are those of a Madman and a Buffoon; and must be referred to the Chapter of *Grotesque* Work.

The Motions of the Body arising from the Sentiments of the Mind, easy and natural.

Those Actions of the Body which are produced by the Motions of the Mind, are simple and easy, not wrested either to this side or that; because their Object is in the Mind, which never moves the Senses, when it is employed in it self.

Of the Motion arising from the View of an Object.

The Motion occasioned in a Man, by the Presence of any Object, may be produced either mediately or immediately; if it arise immediately, the Person who moves, in the first Place, casts his Eyes towards the Object; his Sight being the best able of his Senses, to discover what it

it is; letting his Feet at the same time stand immoveable, and turning his Thighs, Haunches, and Knees, the same Way with his Eyes: Thus, in every Rencounter of this kind, remember to be very curious, and exact in remarking the most minute Motions, and Gestures that arise.

Of Common Motions.

The variety of Motions in Men, is as great as that of the Accidents which befal them, and that of the Fancies, and Imaginations, which pass successively through their Minds. And every Accident makes a greater or less Impression, according to their different Ages, Passions and Complexions; The Motions of a young Man, being always very different from those expressed on the same Occasion, by an old one.

Of the Motion of Animals.

Every two footed Animal, lowers that Part, over the Foot which is raised, more than that, which is over the Foot on the Ground; his upper Parts, at the same time, observing a quite contrary Vicissitude: This may be seen in the Haunches and Shoulders of Men, in Walking; and in the Heads, and Rumps of Fowls.

Every Member to be suitable to the Whole of which it is a Part.

Observe that every Part of a Whole, be well proportion'd to the Whole, of which it is a Part; as if a Man be thick and short in his Shape, let the same Proportion be continued through every Member: let his Arms, for Instance, be thick and short, his Hands Broad and Brawny, his Fingers big, and their Jonctures suitable; and so of the rest.

Decency and Decorum to be observed in your Figures.

Observe a Decorum, or Decency, in your Figures; still making their Actions, Dress, Behaviour, Postures, *&c.* suitable, and becoming to the Dignity, or Meanness of the Persons represented. Thus, in the Figure of a King, take care that the Beard, the Air of the Face, and the Garb, be Grave and Majestick; the Place

ſtately and well adorned; let his Attendants appear full of Reverence, and Admiration; their Mien noble, and their Dreſs ſuitable to the Grandeur and Magnificence of a Princes Court: On the other Hand, in a Scene of Low-Life, let the Perſons appear mean and ill dreſs'd; let the Behaviour of thoſe about them be rude, and familiar; and let every Member be ſtrictly conformable both to the Subject in General, and to the Character of each reſpective Figure in particular; and remember even there to make the Actions of Old Men, unlike thoſe of young Ones; thoſe of Women, different from thoſe of Men; and thoſe of Children, different both from the one and the other.

Of the mixture of Figures different in Age, &c.

Never mix a certain Number of Children, with an equal number of old Men; nor of Gentlemen with Servants; nor of Women among Men: unleſs where the Subject which you repreſent, makes this abſolutely neceſſary.

Of the Quality of the Perſons in a Hiſtory-Piece.

Generally ſpeaking, let there be but few old Men ſeen in your Hiſtory Pieces; and even thoſe that appear, ought to be ſeparated from the young ones; for, in Effect, old Men are but thin, and their Humours have but little Conformity with thoſe of Youth, and where that is wanting, there can be no great Friendſhip, and without Friendſhip, Company ſoon ſeparates. Thus likewiſe, in Grave and ſerious Compoſitions, where Aſſemblies are held, and Matters of Importance debated, let but few Young Men be preſent; it being contrary to Cuſtom to intruſt Affairs of this Nature in the Hands of Youth; who are not leſs able to give Council, than they are unwilling to receive it, and who therefore have two Reaſons, for abſenting themſelves from theſe Kinds of Meetings.

To

To repreſent a Perſon haranguing a Multitude, conſider in the firſt Place, the ſubject Matter on which he is to entertain them; in order to give him an Action ſuitable to the Occaſion: for Inſtance, if the Buſineſs be to perſwade them, let it appear in his Geſtures; if it be to argue and deduce Reaſons, let him hold one of the Fingers of his Left-Hand, between two of thoſe of the Right, keeping the other two ſhut; let his Face be turned to the Aſſembly, and his Mouth half open, ſo as that he may appear to ſpeak; if he be ſitting, let him ſeem as about to riſe, advancing his Head a little forwards; If he be repreſented ſtanding, let him recline a little with his Head, and Breaſt towards the People, and let the Aſſembly be ſeen liſtening with ſilence and Attention; let all their Eyes be faſtned on the Speaker, and let their Actions diſcover ſomewhat of Admiration: let ſome old Man be ſeen wondring at what he hears, with his Mouth ſhut, his Lips drawn cloſe, Wrinkles about the Corners of his Mouth, the bottom of his Cheeks, and in the Forehead, occaſion'd by the Eye-brows, which muſt be rais'd, near the ſetting on of the Noſe: let others be repreſented ſitting, with their Fingers claſped within each other, bearing up their left Knee: another old Man may be ſeen with his Knees thrown a croſs each other, his Elbow leaning on his Knee, and with his Hand, ſupporting his Chin, which may be covered with a venerable Beard.

How to repreſent a Perſon ſpeaking to a Multitude.

To repreſent a Man enraged, let him be ſeen tearing ſome one by the Hair, forcing one of his Knees againſt his ſide, and wreſting his Head towards the Ground; appearing at the ſame time ready to ſtrike him with his right Arm, heav'd up, and his Fiſt clench'd; Further, he muſt

How to repreſent a Man in a Rage.

grind his Teeth, his Hair muſt ſtand on end, his Eye-brows drawn down, and gathered cloſe together, the ſides of his Mouth bent into an Arch, the Neck ſwell'd, and full of Wrinkles, on the ſide that reclines over his Enemy.

How to repreſent a deſperate Man.

A deſperate Man, may be repreſented with the Knife in his Hand, wherewith he has ſtabb'd himſelf, having firſt rent his Cloaths, and torn his Hair; let the other Hand be employ'd in opening and augmenting his Wound; Let his Feet be ſprawling aſunder, his Legs ſomewhat bent, and his Body ſtaggering, and ready to tumble to the Ground.

Of the Motions made in laughing and crying and their Difference.

Between a Perſon in Laughter, and another in Tears, appears no ſenſible difference, in the Eyes, the Mouth, or the Cheeks; but only, in the Form and Diſpoſition of the Eye-brows; theſe being ſwell'd, and drawn together, in him that weeps, and higher and more level in him that laughs. One may further ſhow a Perſon who weeps, tearing his Cloaths, or falling into ſuch other extravagancies, as may be moſt ſuitable to the Subject of his Sorrow; for we find ſome People weep out of Rage, others for Fear, another out of Exceſs of Tenderneſs and Joy, another out of Suſpicion, another through Pain and Torment, and another out of Grief, for the Death of a Relation, or Friend: Thus likewiſe muſt the Degree and Expreſſions of Sorrow be varied; one Man appearing abandoned to Diſpair, another more Compoſed and Moderate, a third contenting himſelf with pouring out Tears, while a fourth adds Groans and Lamentations; another may be ſeen with his Eyes fix'd towards Heaven, his Arms hanging down, wringing his Hands, or claſping his Fingers within each other; and another out of apprehenſion

prehenſion, ſhrugging up his Shoulders to his Ears. The Eye-brows of every Man in Tears muſt be drawn up, near their *Jonctures*, and approach'd cloſe to each other; and the ſides and middle of his Mouth, muſt be wrinkled downwards: a Perſon Laughing, on the contrary, having the ſides of his Mouth raiſed, and his Eye-brows flat and extended.

Of the Poſtures of Children and old Men.

The Diſpoſition of the Legs, either in Children, or old Men, ought never to be ſuch, as may ſhow thoſe parts in any Quick Motion, or make their Actions appear too brisk, and nimble.

Of the Poſtures of Women and young People.

'Tis not decent either for Women, or young People to be ſeen in an Attitude, where their Legs are ſpread too wide from each other; that ſhowing too much freedom, and aſſurance: whereas, on the contrary, Legs drawn cloſe to each other, are Indications of Modeſty.

Of a Man leaping.

Thoſe who are about to leap are taught by Nature, without any Reaſoning of their own, to hoiſt up their Arms and Legs with Impetuoſity; Theſe parts obeying the *Impetus*, and riſing, together with the reſt of the Body, 'till ſuch time as the Effort is expired. This *Impetus* is attended with a quick Extenſion of the Body, which before was bent like a Spring, in the Reins, the *Jonćture* of the Thighs, the Knees, and the Feet; and the Body, in this Extenſion, deſcribes an oblique Line, inclining forwards, and at the ſame time riſing upwards; thus the Motion directed forwards, carries the Body in that Direction; and the Motion intended upwards, heaves up the Body on high; and theſe two, thus Conjoyn'd, diſcribe a large Arch; which is the Line, wherein a Man is obſerved to leap.

Of a Man throwing any thing from him with Violence.

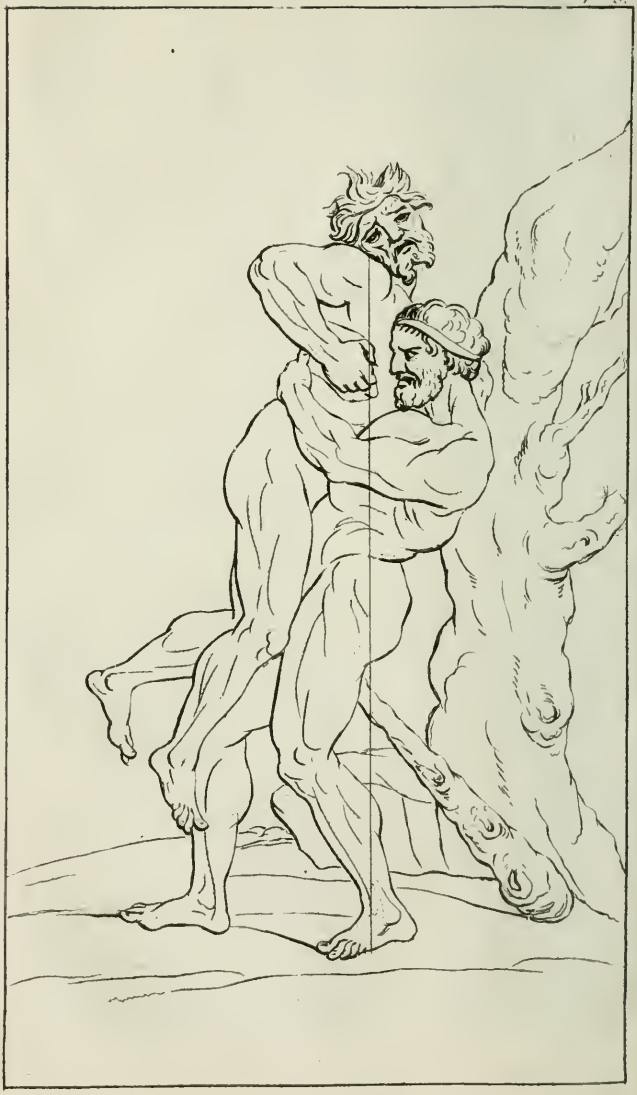
A Man who wou'd launch a Dart, hurl a Stone, or the like, with Violence, may be represented in two different Habitudes; that is, he may be either seen preparing himself for the Action, or performing the Action it self: If you show him in a preparatory State, remember that the Haunch, over the Foot which bears the Body, be seen, directly, under the middle Line of the Breast, and the Hole of the Neck; and let the Shoulder, of the opposite side, be advanced, so as to hang perpendicularly over the Foot, on which the Body rests; so that, if the Right Foot, support the Body, let its Toe, be seen perpendicularly under the left Shoulder.

Why a Man pulling any thing out of the Earth, or darting it in, raises the Leg opposite to the Arm, which acts, and bends it in the Knee.

A Man, who in retiring, wou'd tear any thing out of the Earth, or dart it in, raises the Leg opposite to the Arm wherewith he acts, and bends it in the Knee; this, he does, to Ballance himself, on the Foot which supports the Body; for without thus bending it, he cou'd not possibly act, neither could he retire, without stretching it out.

Of the *Equilibrium* of a Body at rest and out of Motion.

The *Equilibrium* of a Human Body, is of two kinds; to wit, simple and compound: simple is that which a Man makes, in standing steady and immoveable on his Feet. In this Situation, whether he stretch out his Arms, or remove them in any manner from his Body; or whether he be seen stooping, his Body being supported on one Foot; still the Centre of his Gravity will be found perpendicular to the Centre of that Foot on which he rests: and when his Body rests equally on both Feet, the Centre of his Trunk, will then, be found perpendicularly over the middle of the Line, which divides the space between the Centres, of the two Feet. By the compound Equilibrium, we mean that which is made



made, when a Man loaden with ſome Foreign weight, ſuſtains it by means of different Motions. An Example of this, you have in the Figure of *Hercules*, who is ſeen ſtifleing *Antæus*, by bearing him up from the Ground, and ſqueezing him between his Arms, and his Breaſt: in the Conduct of which, it muſt be obſerved, that ſo much of the weight of his own Body, is thrown behind the Central Line of his Feet, as is equivalent to the weight added before the Central Line, of the ſaid Feet, by the ſuſtenſion of *Antæus*.

Of a Man ſtanding on his Feet, and reſting more on one than the other.

When a Man becomes weary with ſtanding long on one Foot, he eaſes the wearied Leg, by throwing part of his weight upon the other: This, however, is a Poſition which ought never to be ſhewn in Practice; excepting in the Figures of old Men, or Children, or at leaſt in ſuch as ought to appear Feeble or Fatigued; for this ſhows a Weakneſs and Weariſomeneſs of Members, which does but ill ſuit with Perſons, under other Circumſtances. A young Robuſt Man, therefore, muſt be always ſeen reſting on one Leg; and if he lean ſome little on the other, let it be only as a Diſpoſition for Motion; to which it is a neceſſary preparative, becauſe all Motion ariſes from Inequality.

Of the Poſition of Figures.

Figures, repreſented in a firm, ſteady Attitude, muſt have ſome variety in their Members, to make a *Contraſt*: that is, if one Arm be advancing forwards, let the other ſtand ſtill, or be caſt backwards; and if the Figure be ſupported on one Leg, the Shoulder over that Leg muſt be lower than the other. Theſe are things never overlook'd by Men of Judgment, who are always particularly careful to ballance the Figures ſtanding on their Feet, ſo, as to prevent them

from tumbling Headlong: For in resting on one Leg, a Man has no use of the other; which being a little bent, remains as if dead, and disabled, for any purpose of supporting the Body: So that so much of the Body as is over this Leg, must of necessity transfer the Centre of its Gravity over the *Jonciure* of that other Leg, whereon the Body is sustained.

Of the *Equilibrium* of a Man standing firm on his Feet.

A Man standing firm on his Feet, either leans equally on both, or he loads one more than the other; if he tread on both alike, he either loads them with the Natural weight of his own Body alone, or to that he joins the additional weight of some Foreign Burthen; when they are laden with the Natural and the Accidental weight together, then the opposite extremes of his Members, are not found equally distant from the *Jonctures* of his Feet; and when he charges them simply with his bare Natural weight, these extremes of the opposite Members, will then, on the contrary, be seen equally removed from the *Jonctures* of the Feet. But of this kind of *Equilibrium*, I intend hereafter, a compleat Treatise.

Of Local Motion.

The Motion made by a Man, or any other Animal, in shifting from one place to another, will be so much the more, or the less quick, as the Centre of his Gravity, is more or less remote from the Centre of the Foot, which supports him.

Of *Quadrupeds* and their Motion.

The Height of four Footed Animals, varies more in those which walk, than in those standing still; and this variety is more or less considerable, as the Animal is of a larger or less size. This is owing to the obliquity of the Legs, when they first touch the Ground; which raise the Figure of the Animal, when they come

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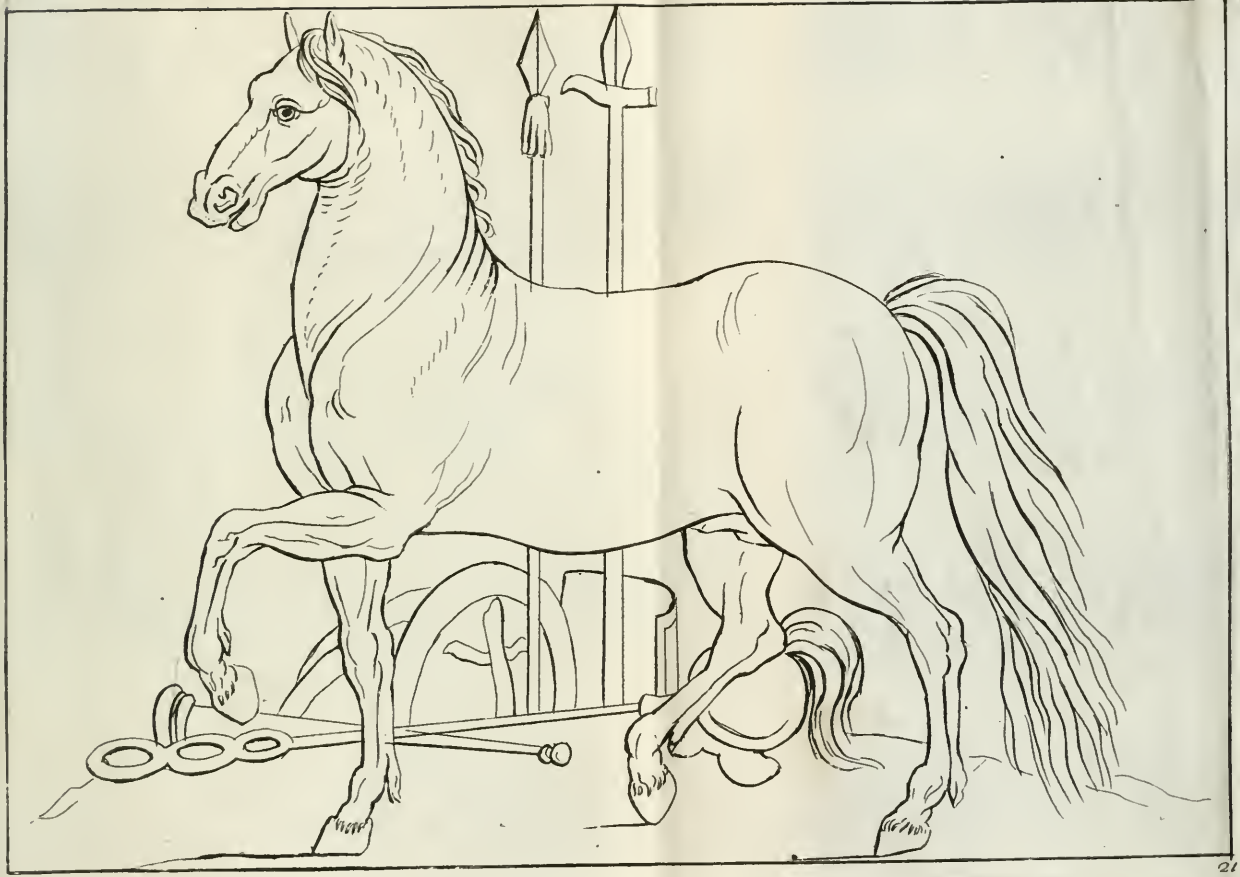

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to ſtraighten, and to ſtand perpendicularly on the Ground.

One half of the Breadth, and Thickneſs of a Man, can never be equal to thoſe of the other half, unleſs the Members appertaining to each, have their Motions perfectly alike, and equal.

Of the Relation which one half of the Body bears to the other half.

In leaping, the Motion of a Mans Head, is thrice as quick as that of his Heel, before the tip of his Foot, quit the Ground; and twice as quick as that of his Flanks. This diverſity is owing to the opening and ſtraightening of three ſeveral Angles, at the ſame time; the higheſt of which, is that formed between the Trunk and the Thighs, forwards; the ſecond that of the Thighs in their *Jonƈture* with the Legs, backwards; and the third is that forwards, which the Legs form, with the Bone of the Feet.

Three ſeveral Motions in a Man who Leaps.

The Memory is in no wiſe able to retain, nor even the Imagination to conceive, all the ſeveral Views and Aſpects, of any Member of an Animal; be it of what kind ſoever. This may be demonſtrated in the Inſtance of a Hand; for ſince every continued Quantity is diviſible in *infinitum*, the Motion of the Eye [*Tab.* 2. *Fig.* 1.] looking at the Hand, and deſcending from *A* to *B* being a continued quantity, may of conſequence be divided into an Infinity of Parts: Now the Hand always changing its Figure and Aſpect, as its Situation alters with regard to the Eye, it will be ſeen under as many different Aſpects, as there are diſtinct Parts in the Motion; that is, the Aſpects of the Hand are varied to infinity. And the Reſult wou'd be the ſame, if the Eye, inſtead of being lower'd from *A* to *B*, ſhou'd be rais'd from *B* to *A*; or if the Eye, were fixed, and the Hand, had its Motion.

Every Member of an Animal capable of an infinite Number of different Views.

If

Nature the Foundation on which a Painter ought always to proceed.

If you wou'd become a Proficient, and practice, either with Profit or Applause, study Nature; let her be your Mistress, nor ever let any thing escape you, but what is authoriz'd by her Precept, or Example.

Of the Judgment which a Painter forms, of his own, or other Mens Works.

'Tis but an ill sign, when a Painter's Knowledge does not go beyond his Work; and yet 'tis Worse, when his Work exceeds his Knowledge; as it happens in those who are surprized in finding how well they have succeeded: but when the Painter's Knowledge, and Light, surpass his Work, so that he is not satisfied with himself, or his Endeavours, 'tis a very happy Omen; and the Novice who finds this Disposition in himself, may rest assured that he is destined to be an able Artist: 'Tis true, indeed, a Man of his Turn will never do a great deal, and his Performances will be but few; but then they will be consummate; and will bear the most rigorous *Examen*, as well as challenge the most rational Admiration.

The Precautions necessary, to inable a Painter, to judge of his own Performances.

'Tis past dispute, that the same Fault, is more clearly seen in the Works of other Men, than in our own; This furnishes us with an Argument in favour of Perspective, and renders it necessary for the young Painter to qualify himself therein, at his first setting out: His next Business will be to get a perfect Acquaintance with the Proportions of a Human Body. He may then proceed to make himself a Master of Architecture; so much of it, at least, as regards the Form and Regularity of the Out-sides of Buildings; And, whenever, in his future Practice, he finds Occasion, for things in which he has had no great Experience, let him not fail to observe Nature, and to *Design* them from the Life. When he is at Work, it may be of Service,

vice, to have a plain Mirrour by him; wherein he may frequently ſurvey his Piece, which will be there repreſented backwards, and will appear as if it were the Work of ſome other Hand; for by this Means he will be the better enabled to diſtinguiſh its Faults. And, Laſtly, He will find his Account in laying down the Pencil, and retiring frequently to take a little Diverſion. For the Mind, at his Return, will be more free, and the Judgment, more clear, and penetrating; whereas, a too aſſiduous Poring, jades the Mind, and rebates its Edge; inſomuch, that he will then, not only be liable to commit the groſſeſt Blunders, but, which is worſe, to overlook them, and to let them eſcape *impune*.

The uſe of a Mirrour in Painting.

If, after imitating any Thing from the Life, you deſire to know your Succeſs, and to ſee how near the Copy approaches the Original; take a Mirrour, and preſenting it to the natural Object, ſurvey the Image exhibited therein, and compare it very carefully with your Painting. This Method is very Appoſite; for if a Mirrour repreſent Objects with *Relievo*, Painting does the ſame; Painting has but a ſingle Surface, and a Mirrour has no more; the Mirrour and the Painting do equally ſhow the Appearances of things incompaſſed with Light and Shadow; and both the one and the other ſhow their Objects, as at a great Diſtance beyond their reſpective Surfaces. Now, ſince 'tis own'd, that the Mirrour, by means of Lights and Shadows, makes Objects appear with *Relievo*; and ſince 'tis further confeſs'd, that among our Colours, there are ſome, whoſe Lights and Shadows, are ſtronger than thoſe exhibited in the Mirrour; 'tis evident, that if you do but manage them with the neceſſary Art and Addreſs, your Painting will likewiſe

wise appear as a natural Object, represented in a large Mirrour. From the Mirrour you will learn the Brights and Obscures of every Object and among your Colours you will find some brighter than the most enlighten'd part of your *Model*, as on the contrary, others, more obscure than the deepest of its Shadows; so that in your Painting have all the Perfection, whereof it is capable, the Object it represents must appear perfectly the same, as it wou'd, were it exhibited in a Mirrour: This, however, being allow'd, that the latter be only viewed with one Eye, for the Reason already deliver'd in our 48th Page.

What manner of Painting the most excellent.

The best manner of Painting, is that which imitates the best, and makes the Picture, bear the greatest Resemblance to the natural Object, it represents. This matching the Painting with the Life, will do but little Credit, to a certain Set of Painters, who seem to aim at reforming the Works of Nature; and who, in Painting (for instance) a Child of a Year old, whose Head in reality is one fifth part of its Height, are so over scrupulous, as only to make it an eighth Part; and the breadth of his Shoulders, which naturally is equal to the height of its Head, is stretch'd by these Gentlemen, to double that Measure; thus reducing the Proportions of an Infant, to those of a grown Man. These People are so hardened and confirm'd in their Error, by practising, and seeing it practised so often, that they persuade themselves that Nature, herself, must be in the wrong; or at least, that those who imitate her must be so, for differing from them.

The first Aim and Design of a Painter.

The great Design of a Painter, is so to manage a Plane Surface, as that on it may appear a Body rais'd and standing out from the said *Plane*

And

And he, who in this Point surpasses the rest, is the Person, to whom the Palm of his Profession, is indisputably due. Now this pitch and perfection of the Art, arising from a just and natural Dispensation of Lights and Shadows, usually expres'd by the Word *Clair-obscure*; it follows, that a Painter, in being sparing of his Shadows, where they are necessary, does an Injury to himself; and renders both his Name and his Works contemptible in the Eyes of the knowing, purely to purchase a false Esteem among the Croud; who having no Notion of the *Relievo*, never mind any thing in a Painting, beyond the Glare, and Pageantry of the Colours.

The Distribution of the Lights and Shadows, requires more Thought and Address, than Designing the Colours.

In Painting, 'tis much more difficult, and requires a great deal more Thought and Reflection, to give the Shadows to a Figure, than to *Design* its *Contours*; this is easily proved, for the out Lines of any Object, may be *Designed* through a Plane Glass, situate between the Eye, and the thing to be imitated; but this Invention is useless, with regard to the Shadows; on account of their Diminution, and the insensibility of their Extremes, which for the most part are confusedly mingled with one another: as I have already shewn in my Treatise of Lights and Shadows.

Rules for managing the Lights of your Figures.

The Light must be cast on your Figures, in such a manner, as may be suitable to the natural Place in which they are supposed to be seen: that is, if they be illumined by the Sun, let their Shadows be deep, and their Lights wide and diffused; and let the Shadows of all the Bodies around, be seen projected on the Ground: If the Figures be exposed in a thick cloudy Air, make no great Difference between the Parts Illumined, and those Shadowed; nor let any Shadows

dows be seen at their Feet: If they be supposed in a Chamber, let their Lights, and Shadows be very bold, and well distinguished from each other, and let their Shadows appear on the Ground; but if the Windows have Shutters, before them, and the Walls be supposed White, then the Difference between their Lights, and Shadows, must be very little, and but just perceptible: if they receive their Light from the Fire, their illumined Parts must be reddish, and vivid, and the Shadows very deep, and those again, which they project against the Walls, or on the Ground, bold, and their Extremities somewhat abrupt; and let these Shadows be still inlarged, as they are further removed from the Body: If one side of any Figure be illumined by the Air, and the other, at the same time, by the Fire, let the former be brighter than the other, and let the latter appear reddish, and nearly of the Colour of the Fire. Observe, in the last place, that your Figures be generally illumined with a strong Light, coming from on high, and especially the Faces, which you *Design* from the Life; the Persons whom you see in the Streets, receiving all their Light from above: and know, that there is no Man, with whose Face you are so well acquainted, as that, did he receive the Light from below, 'twou'd not puzle you to know him.

Where a Person ought to place himself to view a Painting.

Suppose *A B* a Painting, [*Tab.* 2. *Fig.* 2.] and let *D* be the Quarter, whence the Light proceeds; in this case, a Person placed between *E* and *C*, sees the Painting at a great disadvantage, and cannot possibly judge either of its Beauties or Defects; especially if it be Painted in Oil, or be covered with Varnish; because that, receiving a Lustre, will in some measure have

have the effect of a Mirrour: For this reason, the nearer you are to the Point *C*, the less will you see of the Painting; it being thither, that the Rays of Light, receiv'd in at the Window, are reflected from the Painting; but between *E* and *D*, you will be commodiously enough situated, to view the said Painting; and still in proportion as you approach nearer the Point *D*, your place will become the better; since you will there, be the least lyable to the annoyance of these reflected Rays.

How high to place the Point of View.

'Twill be the most advantageous, to have the Point of view on the Horizontal Line; and to have that Line, placed in a Level with the Eye of a Man, of ordinary Stature: Now that is to be esteemed the Horizontal Line, in the Painting, where the farthest part of the Level Earth terminates, or where the Eye loses the sight of the Plane; the Hills or rising Grounds, being out of the Question, and not confined by this rule.

Little Figures never to appear bold and finished.

The reason, why Objects at any time appear smaller, than they are in effect, is, that they are seen at a great distance; for in that case, there being a great quantity of Air, interposed between them and the Eye, and that naturally weakening the Lights, of course, the Minute Particles of the Bodies, must be prevented from appearing distinctly to the Eye. Figures of this kind, therefore, must be touch'd very slightly; as if the Painter intended no more than an unfinished Sketch: to do otherwise, wou'd be to go contrary to Nature, whose practice ought ever to be Religiously followed; for as we have already observed, an Object only appears little, on account of its being far removed from the Eye; and a great distance, always supposes a great

great deal of Air between; as a great deal of Air, ever diminishes the Light, and prevents the Eye from distinguishing the little parts of an Object.

Of the Grounds proper for Figures.

Since we find by Experience, that every Body is encompassed, with Lights, and Shadows, let me advise the Painter, so to dispose his Figures, as that their illumined parts be found on dark *Grounds*; as on the contrary, their shadowed parts on *Grounds*, that are more bright: the Observation of which Rule, you will find to contribute very considerably to the *Relievo* of Figures.

Of Lights and Shadows, and in particular; of the Shadows of Carnations.

To distribute your Lights, and Shadows, with Judgment, consider well, in what place the Light is most clear, and shining, as likewise where the Shadow is the strongest, and most obscure. And take particular care, with regard to the *Carnations* of young People, that their Shadows be never seen to terminate too coarsely, and abrupt; for their Flesh not being firm, but soft and tender, is in some measure transparent; as may be seen, in looking at the Hand, when held between the Eye and the Sun; in which case it appears Reddish, with a kind of Luminous transparency: If you desire to know, then, how to suit a Shadow, to the *Carnation* you are Painting; make a trial with the Shadow of your Finger, holding it, still nearer or further from the Painting, as you desire your Shadow to be lighter, or more obscure; this being adjusted, you may Copy that Shadow.

Rules for Country Pieces.

Trees, and all kinds of Herbs, thick set with little Branches, must have no great delicacy or tenderness in their Shadows; and others, with large Leafs, must occasion Shadows proportionally large.

Since

Since it is impoſſible to repreſent an Animal, without giving it Members; and ſince every Member, to appear ſuch, muſt have a reſemblance with that of ſome other Animal; it follows, that to *deſign* any imaginary Animal, you muſt give it the Parts, and Members of a real one: For inſtance, if you wou'd have it appear like a Serpent, let it have the Head of a Maſtiff, the Eyes of a Cat, the Ears of a Porcupine, the Snout of a Grey Hound, the Eye-brows of a Lyon, the Temples of a Cock, and the Neck of a Tortoiſe. How to make an imaginary Animal appear like a Natural one.

In a Street, running Eaſt and Weſt, the Sun being in the Meridian, and the Walls oppoſed to the Sun, raiſed ſo high, as to ſcreen the Bodies below, from the Solar Rays, the Air at the ſame time being not too much illumined; is found a very advantagious place, for the diſpoſition of Figures; and they are there, always ſeen to receive an uncommon Grace, and *Relievo*: For the two ſides of the Face, in this caſe, participate of the obſcurity of the two oppoſite Walls; and the Noſe, with the reſt of the Face, looking to the Weſt, will be illumined; ſo that the Eye which is here ſuppoſed to be placed at the end of the Street, will at the ſame time ſee the ſides of the Face, ſhadowed by the Walls, and the Front part enlighten'd. To this it muſt be added, that the Shadows will not appear harſh, and ſtiff in their extremes; but will fall off, and loſe themſelves inſenſibly; a circumſtance which contributes very conſiderably to the Gracefulneſs of the Figure. Now the reaſon of this tenderneſs of the Shadows, is owing to the Light, diffuſed in the Air, which ſtriking on the Pavement of the Street, is reflected on the ſhadowed ſides of the Face, and How to give a Grace and *Relievo* to Faces.

tinges them with a faint Lightness. Further, the Light reflected from the Tops of the Houses, and received in at the end of the Street, will illumine the Face, to the very Source, as it were of the Shadows arising under it, weakening them by little and little, till they come to terminate on the tip of the Chin, in a Shadow almost insensible on every side. For Example, suppose this Light were *A E*, [*Tab.* 2. *Fig.* 2.] the Line *F E* of the Light, you see, illumines that part of the Face under the Nose, the Line *C F* only illumining that under the Lip, and the Line *A H* that underneath the Chin; so that the Nose must needs be more strongly illumined, than any other part, since it receives Light from all the Points *A B C D E*.

How to raise and loosen a Figure from its Ground.

If your Figure be obscure, bestow it on a bright *Ground*, and if it be bright, let it be seen on a dark *Ground*; if it be both bright and obscure, let the bright part be found on a dark *Ground*, and the part that is obscure, on a *Ground* that is bright.

The different Effects of Lights, as they are differently large.

A little Light illumining a Body, occasions the Shadows on the unillumined side, to be large, and very bold in their extremes; as on the contrary, a large Light makes the Shadows on the same side of the Body, smaller and less distinct in their Bounds: When a little, but strong Light is inclosed in another more large, but more feeble withal, as the Sun in the Air, the weakest will in that case have the effect of a Shadow, on the Bodies illumined by it.

Disproportions in the Circumstances, and less Considerable parts of a Painting to be avoided.

'Tis very ridiculous, but at the same time very common for Painters, to be overseen in proportioning the circumstances of their Work: thus for instance, we frequently see Houses so exceedingly scanty, and their Doors so miserably

bly low, that they ſcarce reach to the Knees, of their Inhabitants; though they be even ſuppoſed nearer the Eye of the Spectator, than the Perſons who are to enter within them; thus Cities, and Towns are ſometimes ſo pitifully little, that one of the Figures behind, might ſtride over them, with eaſe. And we have ſeen *Portico's* more than once, crowded with People, and yet ſupported by ſuch ſlender Pillars, that one of the Figures has appeared with ſome of the Pillars in his Span, raiſing himſelf up, as with an ordinary Stick: But theſe, and ſeveral other Faults of this kind, are to be very ſtudiouſly avoided.

Of the Extremes of a Body, called Profiles or Contours.

The Out-lines or *Contours* of Bodies, are ſo faint and indiſcernable to the Eye, that they loſe themſelves at the ſmalleſt diſtance, between the Eye, and the Object: thus a Man cannot diſtinguiſh the Face of his neareſt Friend, by the *Contour*; nor has he any other way to know him, but by his Dreſs, Air, and other circumſtances; thus arriving by the Knowledge of the whole, at that of the Part.

The Effect of the Removal of an Object, with Regard to the Deſign.

The firſt things which diſappear in dark Bodies, when removed from the Eye, are their Terms or *Contours*; at a little further diſtance, the Shadows, which divide the parts of contiguous Bodies, ceaſe to be ſeen; further yet, the thickneſs of the Legs, and Feet begin to dwindle; and laſtly, the ſmalleſt parts diſappear, by little and little; till at length, the Object being removed to a great diſtance, appears no other than a dim confuſed Maſs, without any thing diſtinct in its Figure or Parts.

The effect of the Removal of Objects with Regard to the Colours.

The firſt thing which the removal of an Object occaſions to diſappear in its Colours, is their Luſtre; as being by far their moſt ſubtile

part; The second thing which disappears, or rather which weakens it self, in being removed, is the Light, because it is less in quantity than the Shadow; at the third distance, the principal Shadows begin to fail; so that at length, nothing remains but a general and confused obscurity.

The effect of one Body bounding on another.

A Body, of a convex Surface, terminating on another Body, of the same Colour with the first, the Term or Contour of the convex Body, will appear more obscure than that of the other Body, on which it terminates: With regard to flat Surfaces, their Term will appear obscure, on a White *Ground*, and on a Dark Ground, it will appear brighter, than any other part of the Surface; even though the Light wherewith it is illumined, have an equal force on every part.

Of a Man walking against the Wind.

A Man walking against the Wind, when it blows pretty strong, does never keep the Centre of his Gravity, or Line of Direction, in the usual disposition, over the *Centre* of the Foot, on which his Body is sustained.

Of the Window at which a Painter works.

Let the Window at which a Painter works, have a Sash of oil'd Paper before it, without any Bars running a cross the Sash; these Bars being of no use, but to shut out part of the Light, and to project Shadows, which may give him some trouble in the Execution of his Work. It will be of use likewise, to tinge the extreme parts of the Sash, with some obscure Colour; making it fall off gradually, as it advances from the extremities of the Sash: so that the Bounds of the Light, may not be the same with those of the Window.

Why in measuring a Face, and Painting

Having measured a Face, and Painted it exactly according to the Measures, you will find the

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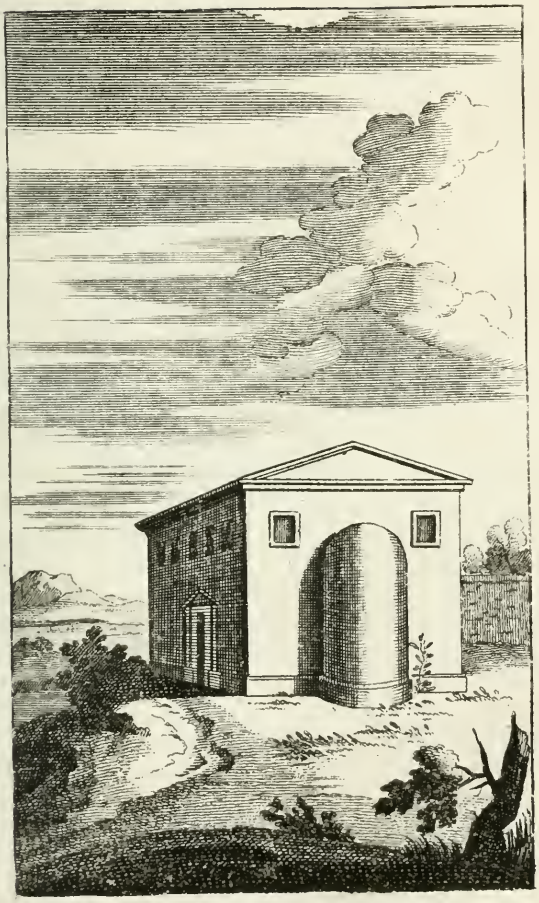

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the Painting appear larger than the Life: The reaſon take as follows; *A B* is the Breadth of the ſpace taken up by the Portrait, [*Tab.* 2. *Fig.* 4.] which is placed at the diſtance marked *C F*, where the Cheeks are; and muſt have the whole Length of the Line *A C* behind, now in this caſe the Temples will be ſeen at the diſtance *O R*, of the Lines *A F B F*, ſo that they will appear narrower than the Life, by the two ſpaces *C O* and *R D*: whence it follows, that the two Lines *C E* and *D F*, to become more ſhort, muſt join the Plan on which the whole Height is *deſigned*; that is, the Lines *A E* and *B F*, where the true bigneſs is found; ſo that the difference as we have already mentioned, lies in the two ſpaces *O C* and *R D*.

after the Meaſures the Picture will appear larger than the Life.

A White Object, being placed between two Walls, the one whereof is Black, and the other White; the ſame proportion will be found between the enlighten'd and the ſhadowed parts of that Object, which the two Walls are ſeen to bear to each other; and if the Object were of an Azure Colour, the effect wou'd be the ſame: ſo that if you ſhou'd have occaſion to Paint ſuch an Object, take the following Method; to give the Object which is here ſuppoſed to be Azure, its proper Shadows, take a Black, like the Blackneſs of the Shadow, ſuppoſed to be reflected from the Wall upon the Object; and to proceed on the ſurer Principles, obſerve what I am now about to deliver. Of what Colour ſoever the Walls are to be Painted, take a little Spoon, larger or ſmaller, as the occaſion may require, having its Brim of an equal Height all around; and with this, meaſure very exactly, the ſeveral ſimple Colours, neceſſary to form your Compounds: Thus for inſtance, if you

How the Surface of every Opake Body partakes of the Colour of its Object.

have given the principal Shadows of the Wall, three Degrees of obscurity, and one of brightness, that is three Spoons full of Black, mingled with one of White; your mixture will be fix'd, and determined. After having then made one Wall Black, and another White, and have an Azure Object, to place between them, which you wou'd bestow the Lights and Shadows, proper to that Azure; place on one side, the Azure Colour which is to remain clear, and without any Shadow, and the Black by it; then take three Spoons full of Black, and mix them with one Spoon full of bright Azure, which mixture must serve for your deepest Shadow: This done, consider the Form of your Object, whether it be Spherical, Cylindrical, Square, or otherwise; if it prove Spherical, draw Lines from the extremes of the dark Wall, to the Centre of the said Sphere, and between the Points where these Lines cut the Surface, dispose your deepest Shadow; after this, observe to illumine or alleviate your Shadows by little and little, in proportion as you remove from the Extreme of the strongest Shadow; as for Example, in *N O*; [*Tab.* 2. *Fig.* 5.] still weakening the Shadow in that place, in proportion as it participates of the Light of the upper Wall *A D*: and this Colour, you must join to the extremity of the principal Shadow of the second Line *A B*, in the same manner, and with the same regulations already laid down for the first.

Of the Motion.

That Figure will appear to run the fastest, which seems in a Posture the most reclining, and the likeliest to tumble forwards.

Of Animals, and in particular of the Flight of Birds.

A Body moving it self, will have so much the greater velocity, as the Centre of its Gravity or Line of Direction, is further removed from the

the Centre of that Part, on which the Body is ſuſtained: This we mention principally, with regard to the Motion of Birds; which, without any wafting of their Wings, or any Aſſiſtance from the Wind, are frequently ſeen to Sail through the Air: Now, this happens, when the Centre of their Weight, is out of the Centre of their Support; that is, out of the Middle of their Wings: Since, if the Middle of the two expanded Wings, be behind the Middle, or Centre of the Bird's Weight, the Motion of the Bird, will, at the ſame Time, be both forwards and downwards; but then 'twill be ſo much the more, or leſs, forwards, than 'tis downwards, as the Centre of its Gravity, is more or leſs remote from the Middle of its Wings; That is, the Centre of Gravity, being removed from the Middle of the Wings, the Deſcent of the Bird is thereby render'd more Oblique; and on the Contrary, as that Centre approaches nearer the Middle of the Wings, the Direction of the Birds deſcent, will become more Perpendicular.

A Figure may appear forty Fathoms high, which yet is painted on a Wall of half that height.

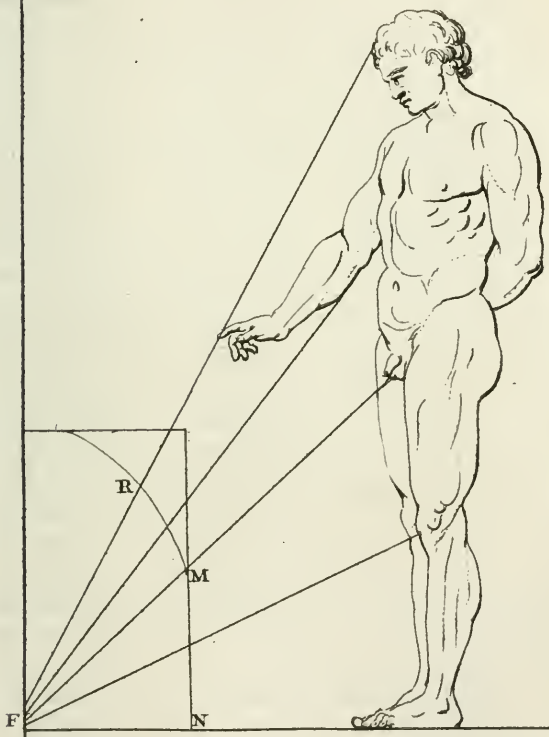
'Tis no difficult matter, for a Painter to repreſent a Figure forty Fathoms high, ſtanding erect on its Feet, in a ſpace of only half that height; ſince neither in this, nor in any other Caſe need he trouble himſelf about the Wall, on which he Paints; and eſpecially when his Work is to be viewed from a Window, or ſome other determinate Place; becauſe the Eye, is not to concern it ſelf with the Evenneſs or Curvity, of the Surface on which the Painting is made; but only with the Force and Conduct of the Things repreſented in the Painting: Twill be convenient, however, to chuſe a Surface that may be a regular Curve, as for inſtance, *F R G*; [*Tab.* 2.

Fig. 6.] since in that Case, your Work will be free from the Interruption of Angles.

How a Painter may Design a Figure that may appear twenty four Fathoms high, on a Wall only twelve Fathoms high.

To Paint a Figure which may appear twenty four Fathoms high, on a Wall of half that height, Observe what follows: Let one half of your Figure be *Designed* on the Wall *M N*, and the other half on the Arch *M R*; in order to which, take the ensuing Method: In the first Place, on some convenient Place trace out a Wall with an Arch, of the same Form, and in the same Proportions, with those whereon you are to Paint; This done, place a *Model* of your Figure, *Design'd* in *Profile*, and of what bigness you please, behind this imaginary Wall; drawing Lines from every part of it, to some fix'd Point, as *F*, and observing in what Places they cut the same supposed Wall, *M N*; that you may be afterwards enabled to set them off on the real one: By this Means, you will find all the Heights, Juttings out, and the several remarkable Points in your Figure: as to the Breadths and Thicknesses, those which are projected on the straight Wall *M N*, will be found in their due Dimensions, the Figure being sufficiently diminished, by its distance from the Wall: But, that part of the Figure which enters the Curviture of the Arch, must have its Breadths and Thicknesses further diminished, in the same Manner as if it were straight; and to proceed the more surely, it may be convenient to mark out this Diminution, on some even Plane, where you may lay your Figure, taken off from the feign'd Wall, *N R*, to be afterwards Transferr'd in its just Proportions to the Real Wall. This is a Method, which I dare venture to recommend as the best, and the most secure, that can be us'd on these Occasions.

Observe,


R
M
F
N

Remarks relating to Lights and Shadows.

Obſerve, that where your Shadows terminate, there be always an Appearance of a half Shadow; that is, a mixture of Light and Shadow; and that the Shadow be more perfectly mingled with the Light, as it is further removed from the dark Body which projects it. Now that Colour of a Body is never ſeen ſimple; this I have already proved, on this Principle; that the Surface of every Body partakes of the Colour of its Object; even though it be the Surface of a Tranſparent Body, as Water, Air, or the like: For Air borrows Light from the Sun, and darkneſs from the upper Regions; and further, it is ſeen tinged with as many different *Dies*, as there are are different Colours between which, and the Eye it is interpoſed. Now though the Air, like Water, and other tranſparent Bodies, has no Colour of its own; yet the moiſt Vapours emitted from the Earth, and received into the lower Regions of the Atmoſphere, thickening and conſtipating that part of the Air near the Earth; the Sun-beams in their Paſſage through it, leave Part of their Light; being unable to make their Way through ſo groſs a Medium, without being reflected every Way: ſo that the upper Regions of the Atmoſphere, at the ſame time, remaining Dark; the Air, hence becomes tinged with Azure; that being the Reſult of Light and Darkneſs mingled together; and the Brightneſs or Obſcurity of this Azure will be found to vary, as the Air is more or leſs charged with theſe Humid Exhalations.

The effect of an univerſal Light on a Multitude of Bodies.

In a Piece, where you introduce any Multitude of Figures, either of Men, or other Animals, obſerve, that their Parts appear ſo much the more obſcure, as they are lower, and as they are further involved in the Croud. Now this is abſolutely

absolutely necessary; there being a less Portion of the Heavens, wherewith these Bodies are supposed to be illuminated, received within the lower Parts of the Space, between the said Bodies, than within those which are higher; as will appear from the following Example. Suppose *A B C D* an Arch of the Heavens, [*Tab.* 2. *Fig.* 7.] diffusing Light on the Bodies beneath, and *M N* two Bodies, bounding the space *S T R H*, included between them: It here appears evident that the Point *F*, must be less illumined than the Point *E*, the latter receiving Light from the whole Arch, *A B C D*, and the former only from a part of it, *C D*.

Of a Plane Surface on a Ground of the same Colour with it self.

A Plane Surface, uniform in its Light and Colour, will never appear loose and distinct, from a *Ground* whose Light and Colour are the same: On the contrary, therefore, they will stand loose and free from each other, when their Light and Colour are found different.

Of the difference with regard to Painting between a Surface and a Solid.

Regular Bodies are of two kinds, the one have Surfaces, that are either Spherical, Ellyptical, or Curved in some other Way; The other have several Sides or Faces, which form so many several Surfaces, separated from each other by Angles; and these Bodies are either regular or irregular. Now a Spherical or an Oval Body, will always have a *Relievo*, and appear rais'd from its *Ground*, even though both the *Ground* and the Body have the same Colour; and the same thing may be observed of Poligons, or Bodies of many sides: The reason is, that they are naturally dispos'd to produce Shadows on one of their sides, which is what a bare, flat Surface is incapable of.

The smallest parts of an Object, are those which in its removal from the Eye, disappear the first.

Among the parts of any Body, removed to a distance from the Eye, that which is the smallest,

leſt, will diſappear the ſooneſt; whence it follows, that the largeſt Parts will be thoſe which hold out viſible the longeſt; for this Reaſon, a Painter muſt never make the ſmall Parts of Diſtant Objects diſtinct and finiſhed; but ought rather to follow the Rules, which I have elſe where laid down for theſe Occaſions. And yet how many Painters do we ſee, who in repreſenting Cities or other Objects, far diſtant from the Eye, make the *Deſigns* of their Buildings as bold and finiſhed, as if they were ſeen in the next Neighbourhood. Now this is to go, contrary both to Reaſon and Experience; for where is Sight ſo quick and penetrating, as to diſcern the Bounds and laſt Extremities of Bodies, even at a moderate Diſtance? Remember therefore, to touch the *Contours* of remote Objects very ſlightly; and obſerve further, that in Painting far diſtant Bodies, you never tinge them with ſo ſtrong an Azure, as that it may have a contrary Effect, and make them appear near at hand: Take care, laſtly, that in repreſenting a City, ſeen afar off, you never make the Angles of the Buildings appear; ſince thoſe Angles, being formed by the Concourſe of two Lines in a Point, and a Point having no Parts, it cannot be ſuppoſed that they ſhou'd be viſible at a Diſtance.

Why the ſame Champaign appears larger at ſometimes than at others.

A Champaign ſometimes appears larger, and at other times ſmaller than ordinary; this is owing to the Air, interpoſed between the Eye, and the Horizon, which at ſome times is groſſer, and at other times more ſubtile than uſual.

Among ſeveral Horizons equally diſtant from the Eye, that ſeen through the groſſeſt Air, will appear the moſt remote; and on the contrary, that will ſeem the neareſt, which is ſeen through an Air, the moſt ſubtile.

Objects

Objects of unequal Bulks, and seen at equal distances, will appear equally big, when the several Airs through which they are seen, bear the same proportions with regard to grossness, which the unequal Bodies bear to each other with regard to bigness: with this restriction, that the grossest Air be found between the Eye, and the smallest Body; and the rest, in the same order. Now, this may be proved, by the Perspective of Colours; by means of which, a Mountain, which wou'd be found very small, shou'd you come to measure it, is never the less made to appear larger than a Hillock, which is seen nearer the Eye, and whose Dimensions are considerably larger; just as a little Finger held near the Eye, is found to cover a large Mountain, when further removed.

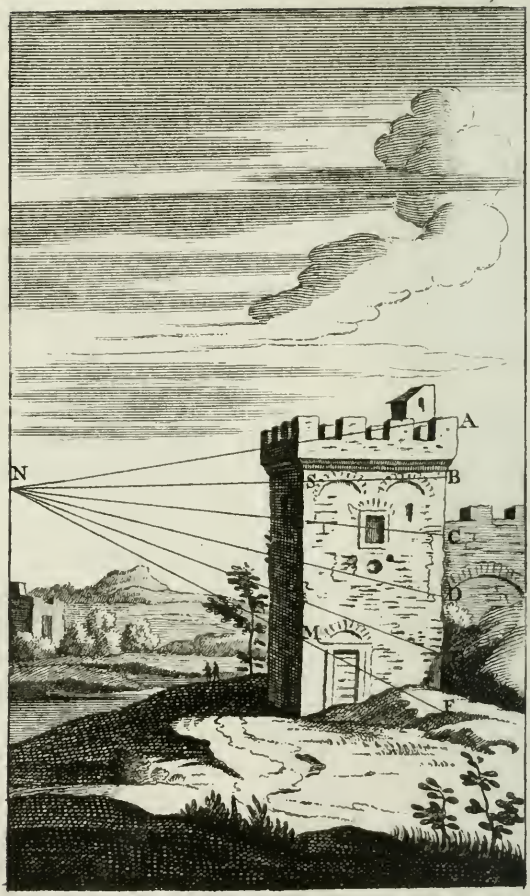
Miscellaneous Observations on Perspective, and Colours.

Among Bodies of equal Obscurity, Bigness, Figure, and Distance from the Eye, that will appear the smallest, which is seen on the Whitest *Ground*, or in the most luminous place: this may be observed in looking at a Tree, stripp'd of its Leaves, and illumined by the Sun, on the side opposite to that, whereon you look; for in that case, those Branches of the Tree, which face the Sun, will be diminished to that Degree, as almost to become invisible: And the same thing will be found in holding out a Pike, or other long Pole, straight between the Eye, and the Sun.

Parallel Bodies, placed upright, and seen in a Fog, will appear larger towards the Top, than near the Bottom: the reason is, that the Foggy Air, being penetrated by the Rays of the Sun, will appear by so much the Whiter, as it is the lower.

Bodies

front. p. 157.



Bodies ſeen at a diſtance, appear ill proportioned: this happens, becauſe the brighter parts ſend their Images to the Eye, ſtronger and more ſenſible, than thoſe emitted from the obſcurer parts; and I once obſerved, in looking at a Woman, who was dreſs'd in Mourning, that her Head which was covered with a White Hood, appeared twice as large as her Shoulders which were Black.

Of Cities and other Objects ſeen in a groſs Air.

The Eye looking at a City, in a Foggy Seaſon, or when the Air is rendered groſs, by Smokes, or other Vapours, the Buildings will appear leſs ſenſible as they are leſs elevated, and on the contrary, they will appear the clearer, and more diſtinct, as they are ſeen at the greater Height. This follows, from what we have already proved, *viz.* that the Air is more groſs, as it is lower, and more ſubtile, as it is higher; and may be exemplified in the following Figure; where the Tower *A F*, is ſeen by the Eye *N*, in a groſs Air *B F*, which is divided into four Degrees, each more denſe, as it is nearer the Earth.

By how much there is leſs Air, interpoſed between the Eye and the Object, by ſo much will that Object partake leſs of the Colour of that Air: whence it follows, that as the greater quantity of Air, is found between the Eye and the Object, the Object muſt appear more tinged with the Colour of the Air. Now that may be thus demonſtrated; ſuppoſe *A E* a Tower, *O N* the Eye, receiving the Species of the five parts of the ſaid Tower *A B C D E*: now if the Air were of the ſame denſity throughout, there wou'd be found the ſame proportion, between the Degree of Azure, contracted by the Foot of the Tower *E*, and the Degree of Azure, which

which the said Tower contracts at the part *B*, that the Length of the Line *M F*, bears to the Length of the Line *B S*: but since 'tis shown in the firmer proposition, that the Air is unequally gross, and that it is denser as it is lower; it follows, that the proportion between the Colours which the Air conveys to the Tower, at different elevations, must exceed the proportion of the Lines; since the Line *M F*, besides the Excess of its Length, passes through an Air, more dense than that of the Line *B S*.

Of the Rays of the Sun passing thro' the Interstices of Clouds.

The Rays of the Sun, passing through any Chasm or Vacuity interposed between the different densities of Clouds, illumine every place as they pass, and tinge even those which are obscure, with their brightness; the only dark parts remaining, being those, which are found between the interruptions of the said Rays of the Sun.

Of Objects seen in a Mist or thick Air.

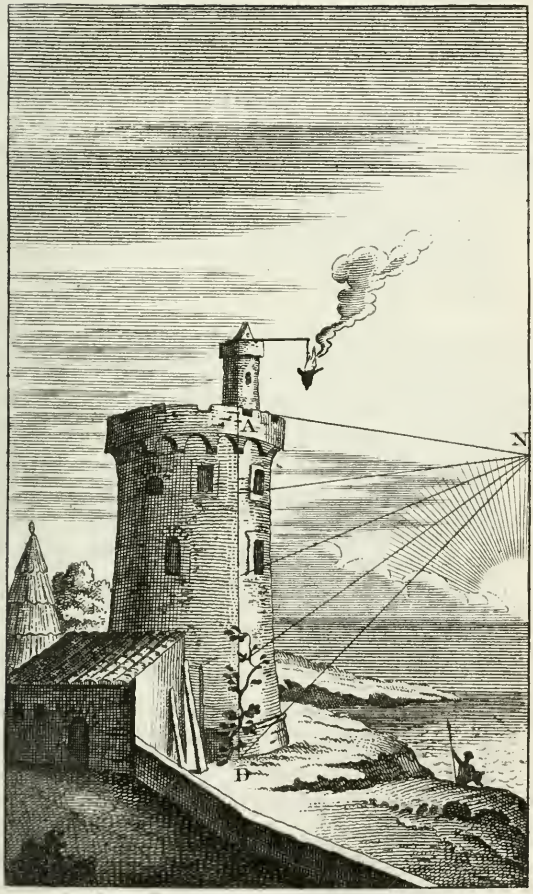
By how much the Air is nearer the Earth, or Water, by so much it is the more gross; this follows from a Proposition which I have elsewhere demonstrated, *viz.* that a heavy Body raises it self less, than a light one; whence, by the Rule of Contraries, it follows, that a light Body raises it self higher than a light one.

Of Buildings seen through a Gross Air.

That Part of a Building, which is found in the grossest Air, will be the least sensible, and will show it self the least; and on the contrary, that Part found in the purest Air, will appear the most visible and distinct: Thus, if you suppose the Eye *N*, looking at the Tower *A D*, every Part will be seen the more confusedly, in proportion as it approaches nearer the Earth; and more clearly and distinctly, as it is further removed from it.

Every

front. p. 158



Every obſcure Object, will appear ſo much the more Clear, and Bright, as it is further removed from the Eye; of courſe, therefore, the ſame Object will appear ſo much the more obſcure, as it is ſeen at a leſs Diſtance: Hence it follows, that the lower Parts of an Object, ſeen in a thick Air, will ſeem further removed, than its Top; ſo that the bottom of a Mountain, will in appearance be further Diſtant from the Eye, than its Summet; and yet in Reality it is the neareſt. Of Objects ſeen at a Diſtance.

The Eye viewing a City invelloped in a Groſs Air, will find the Tops of the Buildings, obſcurer, and, withal, more diſtinct, than the Parts beneath; for the latter will be ſeen on a Whiter *Ground* than the former; inaſmuch as they are found in an Air, that is lower and more Groſs. How a City appears in a Groſs Air.

The lower Bounds and Extremities of far diſtant Objects, will be leſs viſible than the upper: This is very obſervable in Mountains, whoſe Tops have for their *Ground*, the Sides of ſome other Mountains, riſing behind them; For here, the Baſis being incompaſſed with a Groſſer, and more illumined Air, muſt of courſe be leſs diſtinct and determined than the Summet; ſo that the Top will be very evident and diſcernible, the Root all the while being dimm and indiſtinguiſhible. The ſame things happens with regard to Trees, Buildings and all other Bodies riſing high into the Air; and hence it is, that looking from a great Diſtance, at any very tall Tower, we ſee it larger at the Top, than the Bottom; the thin and leſs lucid Air, wherewith the Top is ſurrounded, leaving more Room for the Minute Parts to appear, than the Groſſer, and more luminous *Medium*, inveſting the Foot of the ſame Building; as I have elſewhere ſhewn, Of the lower Bounds, or Extremities of Remote Objects.

on

on this Principle; that a Gross Air diffusing a Whiteness on Objects, enfeeble their Images; whereas a more subtile Air, in tinging Objects with Azure, takes off less of their Force; and weakens their Impression, but in a less Degree. Of this we have a very sensible Instance in Fortifications; wherein, the Intervals between the Battlements, and the extent of the Battlements themselves, are mutually equal; and yet at a moderate Distance from the Eye, the Intervals appear considerably larger than the Battlements; at a yet greater Distance the Battlements are extremely diminished; Lastly, The Distance is sometimes so Great, that the Battlements entirely disappear and become invisible; so that the Wall appears full, and even, without any Gaps or Interruptions at all *.

Of remote Objects.

The Terms, or *Contours* of Objects appear less distinct, as they are seen at a greater Distance.

Of the Azure of remote Objects.

Among Objects far distant from the Eye, be their Colours what they will, that which has the greatest Share, either of Natural, or Accidental Obscurity, will appear of the deepest, and the strongest Azure. Now Natural Obscurity, is that arising from the proper Colour of the Body: By accidental Obscurity, we mean that derived from the Shadows of other Bodies.

What Parts of a Body are the first which disappear at a Distance.

Those Parts of a Body which are the most Minute, are found to be the first, which disappear, at a Distance from the Eye: the Reasons are, that unequal Objects, being placed at equal Distances,

* This Instance is fetch'd from the Antient Fortifications, wherein the Walls being of Stone, and being, likewise bleech'd with the Weather, were usually whiter than Air.

stances,

ſtances, the ſmalleſt will be ſeen by the Eye under the acuteſt Angle; and that our Knowledge or Diſcernment of Bodies, is more imperfect as their Bulk is narrower and more confined. It follows, therefore, that when a larger Bulk is ſo far removed, as that the Angle which it ſubtends at the Eye, is ſo acute, as to be but barely perceptible; a quantity ſtill leſs, muſt be entirely loſt, and remain wholly inviſible.

Why Bodies are leſs diſtinguiſhible at greater diſtances;

The further any Object is removed, the leſs we know of it, and the more imperfectly do we diſtinguiſh what it is. The reaſon is, that the ſmalleſt Particles of Objects diſappearing ſooneſt, and the larger becoming inviſible, at a yet greater diſtance; the Object being removed further and further, its parts are more and more diſſipated, till at length all the parts, together with their whole, vaniſh and diſappear: The Colour it ſelf being loſt and effaced, by means of the Air interpoſed between the Eye, and the Object.

Why Faces and other Objects become obſcure at a diſtance:

Viſible Objects make no impreſſion on the Senſe, but by the Images or Species which they ſend to the Eye: theſe Images are nothing but Rays of Light, iſſuing from the *Contours*, and other parts of the Object, which paſſing through the Air, meet on the Pupil of the Eye, and there form an Angle: Now as there are always Vapours in the Air, which ſurrounds us, it happens that ſeveral of the Rays never reach the Eye, being broken and intercepted in their Paſſage; inſomuch that at a great diſtance, ſo many of theſe Rays are loſt, that the Image comes maim'd and imperfect; and the Object in conſequence thereof, appears confuſed and obſcure. Add to this that the Organs of ſight are fre-

quently indispoſed; ſo that the Rays of Light failing of their ordinary impreſſion, the Object appears dim and indiſtinct.

Which parts of Bodies removed to a diſtance diſappear the firſt, and which the laſt.

In removing a Body to a diſtance from the Eye, that part which is ſmalleſt, will diſcontinue its appearance before that which is larger: This is obſervable in the Minute Particles of Bodies, and in the ſlender Limbs of Animals; for inſtance, in the Horns and Legs of a Deer, which are loſt to the Eye, at a much leſs diſtance than its Body. In general, however, it may be obſerved that the firſt thing which diſappears in an Object, is its *Contour* which bounds it, and which determines it to be of that Figure.

Of Linear Perſpective.

Linear Perſpective conſiſts in repreſenting by Lines and Strokes, the Figures and Bigneſſes, under which Objects are ſeen, at their reſpective diſtances; to this end determining how much the bigneſs of an Object is diminiſhed, and how far its Figure is altered, at its ſeveral Degrees of diſtance, till it come entirely to diſappear. Now Experience has taught me, that in viewing ſeveral Bodies, equal in Bulk, and ranged at equal diſtances from each other, the firſt will appear twice as big as the ſecond, and that ſecond, twice as little as the firſt, and twice as big as the third; and ſo of the reſt: obſerving, however, that this does only hold upon the ſuppoſition, that the Eye be placed at the ſame diſtance from the firſt, that the firſt is placed from the ſecond; and that this diſtance do not exceed twenty Fathoms; for beyond twenty Fathoms, the equal Figure will loſe three fourths of its bigneſs; and beyond forty Fathoms, it will loſe nine tenths, and nineteen twentieths at the diſtance of ſixty Fathoms. And thus the diminution will always keep the ſame proportion,

as

as the distance grows greater. Now to apply what I have here said, to your use in Painting, observe that you be removed twice your Breadth from the Piece you are upon; for if you be only placed at half that distance, it will make too great a difference, between the first Fathoms and the second.

Why Objects appear larger than they are in effect, when seen in a Fog.

Those Objects, which are seen shrouded in a Fog, appear considerably larger than they are in reality: This is owing to the Perspective of the *Medium*, interposed between the Eye and the Object; which does not proportion its Colour to its Magnitude: Or, in other Words, it is owing to the Grossness, or Resistence of the Fog, by means of which, the Natural Colour of the Object is weaken'd and alter'd beyond its due Proportion; that is, the Diminution of the Angle under which the Eye sees the Object, at that Distance, is not equal to the Diminution of the Colour of the said Object, occasioned by its being seen through that *Medium*. So that the Object which we here suppose at half a Mile's Distance from the Eye, will yet be as far removed in Appearance, as when seen on the the Edge of the Horizon, in a clearer Day: Now, you know that a Tower seen at this latter Distance, appears no taller than a Man; 'Tis no wonder, therefore, if the Magnitude of the forementioned Object, be augmented; since, while its Real Distance is but half a Mile, the Eye judges of it from its apparent Distance, which is vastly Greater.

Of the Tops and Bottoms of Buildings seen in a Fog.

That Part of any neighbouring Building will appear the most confused, which is seen at the greatest Distance from the Earth; The Reason is, that there being more Dense, Cloudy Air between the Eye and the Ridge of the Building,

than between the ſaid Eye, and the bottom of the Building, the Image of the latter, muſt be more weakened, and diſordered in its Paſſage, than that of the former. Nor muſt it be forgotten, that a Tower, whoſe Sides are Parallel, being ſeen at a Diſtance, and in a Foggy Air, will appear narrower and more contracted, as it approaches nearer its *Baſis*; This happens, becauſe, as we have already ſhewn, the Air becomes more Groſs, as it is nearer the Earth, and more White, as it becomes more Groſs; and becauſe every obſcure Object, appears ſmaller, as the *Ground* on which it is ſeen, is more White: For the *Medium* being Whiter, near the Foot, than the Top of the Tower, it follows, that the Building, on account of its Obſcurity, muſt appear ſmaller, and narrower, towards its Extreme, than towards its Upper Parts.

Of Buildings ſeen in the Morning, or Evening through a Groſs Air.

In Buildings which are ſeen from a far, either in the Morning or Evening, the Weather being Foggy, or the Air very Groſs; thoſe ſides alone become viſible, which are turned towards the Horizon, and illumined by the Sun: The other Parts of the Buildings, unillumined by the Sun, remaining almoſt of the Colour of the Fog, and ſcarcely to be diſtinguiſhed from it.

The higheſt Objects ſeen at a Diſtance and in a Fog, appear more obſcure than thoſe which are lower.

Among Bodies ſeen in a Fog, a Cloud, Denſe Air, Vapour, Smoke, or only at a Great Diſtance; that will appear the moſt Viſible, and Diſtinct, which is the moſt elevated; And among Things equally elevated, that which is found in the obſcureſt Fog, will appear the moſt Obſcure. Thus the Eye *H*, viewing *A B C*, three Towers of equal Height; it will ſee the Top *C* of the firſt Tower, as low as *R*; which is found immerged two Degrees within the Fog; and the

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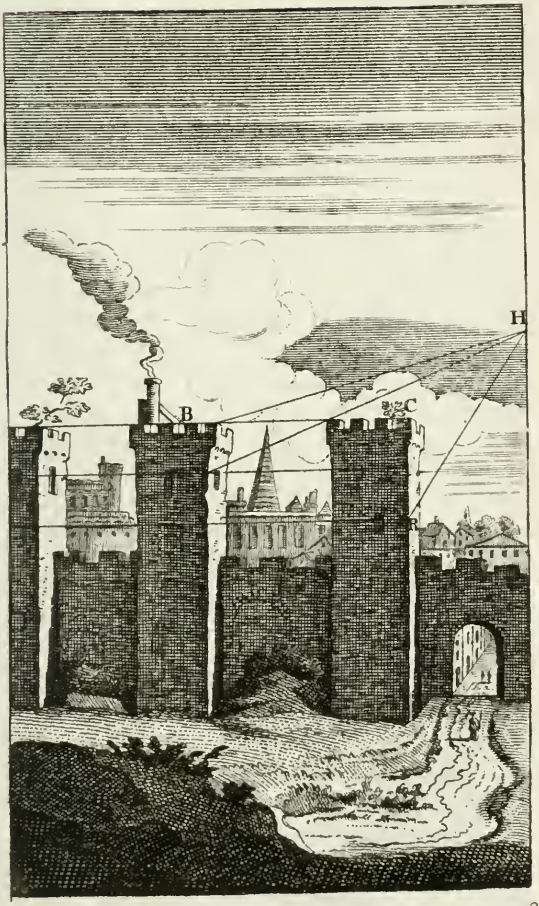

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the Top of the Middle Tower *B*, will be ſeen in the ſame Fog; but then, ſo much of it as appears to the Eye *H*, will not be ſunk beneath one Degree of Depth; ſo that the Top *C*, will appear more Obſcure than the Top *B*; and that again, more obſcure than the Top *A*.

Of the Shadows ſeen in Bodies viewed at a Diſtance.

The Neck of a Man, or the like Part of any other Body, rais'd perpendicularly, and covered with the Prominency of ſome other Part, will appear more obſcure, than the Face, or Side perpendicular to the Part ſo Prominent. This follows from an Axiom which will be eaſily allowed, *viz.* That every Body will be the more illumined, as it receives Light from a greater ſhare of its luminous Body. Thus, in [*Tab.* 2. *Fig.* 8.] the Point *A* is not illumined by any Part of the Heavens *K F*, the Point *B* is illumined by the Part *K H*, the Point *C*, by the Part or Arch *G K*, and the Point *D* is illumined by the entire Arch *K F*; ſo that the Stomach will be found equally enlighten'd with the Forehead, the Noſe and the Chin; the Points *C* and *B*, at the ſame time, being leſs enlighten'd, and the Point *A* none at all. Now, with regard to Faces, it muſt be obſerv'd, that at different Diſtances, their ſeveral Shadows diſappear; none being at length found remaining, but thoſe of the Orbits of the Eyes, and of ſome other the like Parts; and further, that at a great Diſtance, the Shadows do all ceaſe to be ſeen, the Lights which ſhou'd ſhow them, being weaken'd, and at length, entirely loſt, by Reaſon of their ſmallneſs, and the Diſproportion they bear to the Shadows; So that the whole Face becomes obſcure, and appears inveſted with one general half-Shadow. Not that there is any real Alteration, either in the Lights, or Shadows themſelves; for the Ef-

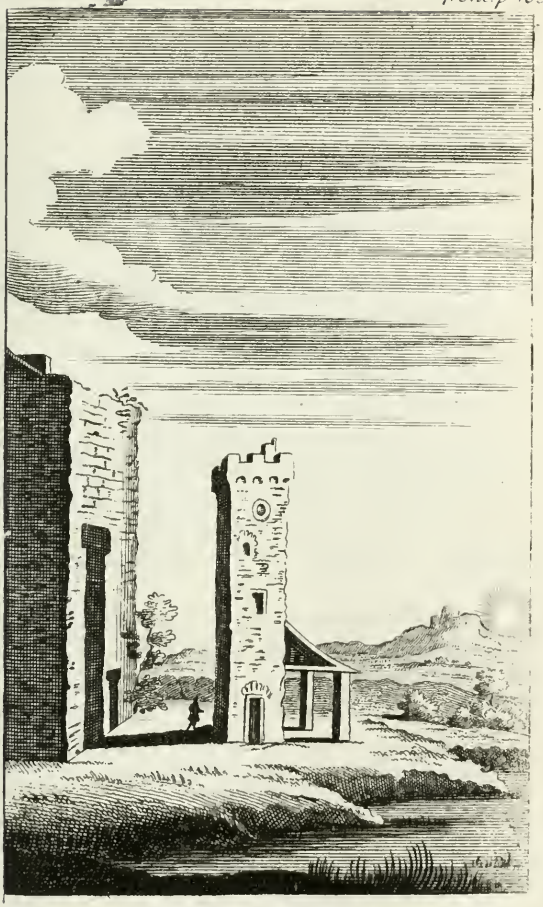
fect is wholly owing to the Distance, which weakning their Force and Impression, disables them at last, from distinguishing themselves; so that mingling together, they form what we call a Half-shadow. Thus, 'tis Distance in like manner, which makes Trees, and other Bodies, appear more Obscure, than they are in Reality: And, thus 'tis Distance, which occasions that Azure Colour, wherewith all remote Bodies appear, and which is seen the most sensibly, in the shadowed Parts; those more illumined, being more able to preserve their Native Colours, Genuine, and unadulterated by the Air.

Why the Shadows projected on a White Wall, towards the close of the Day, appear Azure.

When the Sun is near his setting, the Shadows projected on White Walls, open to the Air, will always appear of the Colour of Azure: This follows, from what we have already shewn, *viz.* That the Surface of every Opake Body partakes of the Colour of its Object; whence, the Whiteness of the Wall, being altogether destitute of Colour, must assume those of its Objects; which, in this Case, are the Sun, and the Heavens: and since the Sun in his Evenings Visit to the Horizon, appears Reddish, and the Heavens Azure; And since those Places where the Shadows are found, are out of the reach of the Sun; we having elsewhere proved, that no luminous Body has ever seen the Shadow of any Body illuminated by it; 'Tis Obvious, that the Shadow of the Heavens, projected on the White Wall, will appear Azure; and further, that the *Ground* of that Shadow, being illumined by the Sun, will appear Reddish, in Conformity to the Redness of its Luminary.

Of Smoke.

That Smoke, which is interposed between the Sun, and the Eye that sees it, must appear brighter and more Transparent, than the Smoke seen



ſeen in any other part of the Painting: The ſame thing may be obſerved of Duſt, Fog, and other like Bodies; which ought always to appear obſcure, when you are placed between them and the Sun.

Smoke is more tranſparent, and of a Colour leſs deep towards the Extremes of its Maſſes, than in the Centre, and towards the Middle.

Smoke riſes more obliquely, as the Wind which drives it is more ſtrong, and violent.

Smoke, appears under as many different Colours, as there are different Cauſes to produce it.

Smoke, never projects any Shadows that are bold and defined; and its Extremes weaken by little and little; becoming inſenſible, as it removes further from its Origin: Thoſe Objects, which are ſeen through it, appear ſo much the leſs ſenſible, as it is more Denſe; and it is found ſo much the Whiter, as it is nearer its Principle, and the more Blueiſh, as it is further removed.

Fire appears more obſcure, as there is a greater quantity of Smoke, found between it, and the Eye.

Where the Smoke, is at the greateſt Diſtance, Objects are the leaſt dimm'd and intercepted by it.

Paint a Landskip, dim and confuſed, as if ſhrowded in a thick Fog; Smoke mounting in ſeveral Places, with Flames glaring in the loweſt and thickeſt Volumes; and let the Roots of the Mountains appear leſs viſible than the Tops; as we have already obſerved of Fogs.

Of Duſt.

The Duſt rais'd by the Motion of any Animal, appears clearer as it is mounted higher, and on the contrary, more obſcure as it is lower; ſuppoſing it between the Sun and the Eye.

Miscellaneous Rules and Precepts, for Painting.

The Surface of every Opake Body, partakes of the Colour of the Transparent *Medium*, found between the Eye and that Surface; and by how much that *Medium* is more dense, and the space between the Eye and the Surface more great; by so much the Colour, which the Surface borrows from the *Medium*, is found more strong.

The Bounds or *Contours* of Opake Bodies, are so much the less visible as those Bodies are further removed from the Eye which views them.

The parts of Opake Bodies, will be the more strongly shadow'd or illumined, as they are nearer the dark Body, whence they have their Shadow, or the luminous Body that gives them Light.

The Surface of every Opake Body, partakes more or less of the Colour of its Object, as that Object is more or less removed, or as it makes its impression with a greater or less force.

Those things which are seen between Light and Darkness, appear with a greater *Relievo*, than those which are seen, entirely either in Light or Darkness.

When in representing any distant Scene, you Paint your Figures bold and distinct, these in stead of appearing far removed, will be seen near at hand: Use so much Conduct and Discretion, therefore, in your Figures, as that they may show their Distances; nor in imitating any Object, whose bounds on account of their distance, appear dim and indistinct, must you scruple to Copy, even that dimness, and confusion in your Figure.

Distant Objects appear dim and confused in their *Contours* for two reasons; The first is, that they come to the Eye under so small an Angle, that

that their effect is like those of the smallest Objects; as the Nails of the Fingers, the Bodies of Insects, or the like Minute Bodies, whose littleness prevents the Eye, from discerning their Figure, or Parts: The second is, that remote Objects, have so much Air interposed between them, and the Eye, that it has the effect of a Fog, or some other dense Medium, tinging, and discolouring the Shadows of Objects, with its Whiteness, and stripping them of their natural obscurity, till they appear of a Blueish Tincture: that being the middle, between Black and White.

Though several Objects become invisible, on account of their distance, yet those illumined by the Sun, can never fail of making some impression on the Eye; the rest, which are unillumined, remaining wrapp'd up in Shadow and Obscurity; and since the Air becomes more gross, as it approaches nearer the Earth, those things which are found the lowest, will be the darkest and most confused, those more elevated, at the same time, appearing clearer and more distinct.

When the Sun reddens the Clouds, over the Horizon, with his Beams, those Bodies which by reason of their distance, participate of Azure, will be likewise found tinged with a share of this Redness; and this mixture or union of Red and Azure, will beautifie the Champaign, and render it extremely pleasing and agreeable. All the Opake Bodies illumined with this mingled Colour, will appear very bright, being seen to border mostly upon the Red; and the Air, will have a Colour like to that of Yellow Flower-de-luces.

The

The Air, between the Earth and the Sun, at the time of his rising or setting, will obscure the Objects found underneath it, more than any other Portion of the Hemisphere; it being here, that the Air is found more White, than in any other part.

Never draw the Terms or *Contours* of any Body terminating on another, or to which another Body serves as a *Ground*, too bold and apparent; but let it be rais'd and loosen'd from the *Ground*, of it self.

One White Curvilinear Body, terminating on another White Body, will have its *Contour* dimmer and more obscure, than any other of its illumined parts; and on the contrary, this same *Contour*, if found on a dark *Ground*, will appear brighter, than any other illumined part of the Object.

That Thing will appear the most separated and remote from another, which is seen on a *Ground*, of a Colour the most different from its own.

The Things which first lose themselves at a distance, are the *Contours* of such Bodies, as have the same Colour, and are placed over one another, as for instance, one Oak over another Oak, *&c.* At a greater distance, the extremes of Bodies, which have a difference in Colour, and which bound on each other, are found to disappear, as Trees and Plough'd Ground, Walls, the Ruins of Houses, the Fragments of Rocks or Mountains; lastly, at a distance still greater, those things which are usually the most conspicuous, as bright and obscure Bodies terminating on each other, dwindle and vanish.

Among Bodies equally elevated above the Eye, that which is placed at the greatest distance, will ap-

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pear the loweſt; and of ſeveral Bodies ranged equally below the Eye, that will appear the loweſt, which is placed the neareſt.

In a Landskip which takes in far diſtant Objects, thoſe, found on the Banks of Rivers, or Lakes, will appear leſs, than thoſe ſeen at a diſtance from them.

Among Bodies of equal denſities, thoſe neareſt the Eye, will appear the leaſt denſe; and on the contrary, thoſe more denſe, which are more remote.

Every Object appears bigger, as the Pupil of the Eye which views it is larger. This you may be convinced of, by looking at one of the Heavenly Bodies through a ſmall Pin-hole made in a Paper; for that little Perforation admitting but a ſmall ſhare of the Light of the Body, the Object becomes diminiſhed, and loſes of its uſual Magnitude, in proportion, as the hole of the Paper, is ſmaller than the Pupil of the Eye.

The Air being replete with groſs Vapours, the *Contours* of Bodies inveſted by it, become dim and confuſed; and the Bodies themſelves appear larger, than they are found to be in effect. The reaſon is, that though the Linear Perſpective, does not diminiſh the Angle under which the Image of the Object ſtrikes the Eye, yet the Perſpective of Colours, or the Aerial Perſpective throws back the Body, and places it at an imaginary diſtance, much greater than its real one; ſo that while the one removes the Object from the Eye, the other preſerves it, in its natural Magnitude.

When the Sun is near his ſetting, the Dews which are then obſerv'd to fall pretty plentifully, thicken and condenſe the Air; ſo that all Objects unillumined by the Sun, remain dark and

and confuſed; thoſe which are illumined, at the ſame time, receiving a Tincture of Red, or Yellow, according as the Sun is found in the Horizon. Further, thoſe things then illumined by the Sun, will be very evident, and will ſtrike the Eye very ſenſibly, eſpecially Buildings, the Houſes of Towns and Cities, and Caſtles in the Country; for their Shadows will be very obſcure and deep, and that oppoſition, found between the brightneſs of their upper illumined parts, and the darkneſs of their lower and ſhadow'd ones, will give them an uncommon Force, and *Relievo.*

A Thing illumined by the Sun, is further illumined by the Air; whence ariſes two ſeveral Shadows, whereof, that will be moſt obſcure, whoſe Central Line is directed towards the Centre of the Sun: And obſerve that the Central Lines of the two Lights, Primitive and Derivative, being continued within the Shadow, will form the Central Lines of the Primitive and DerivativeShadows.

'Tis a fine ſight, to obſerve towards the Evening, how the Tops of Houſes, Towns, Caſtles, Trees, and other elevated Objects, are illumined and gilt with the Beams of the ſetting Luminary; all the reſt at the ſame time remaining dim, and indiſtinct, receiving no Light but from a dusky Air, and that too weak to diſtinguiſh their Lights from their Shadows. Now thoſe tall Objects, being thus tinged and enlighten'd with the Sun, to repreſent them in a Painting, you muſt take ſome of the Colour wherewith your Sun is Painted, and mingle it with the Light parts of all the Objects ſuppoſed to be illumined by it.

It

It often happens, that a Cloud appears obſcure, without receiving a Shadow from any other Cloud: This is owing to the ſituation of the Eye, which being found near the Cloud, ſees only ſo much of it, as is ſhadow'd; as in another place, or at a greater diſtance, it wou'd diſcover both its ſhadow'd and illumined ſides.

Of two Bodies equally high, that which is ſeen at the greateſt diſtance from the Eye, will appear the loweſt. Thus of the two Clouds repreſented in *Figure* 9. *Tab.* 2. though that neareſt the Eye, be really the loweſt, yet in appearance it will be the higheſt; the Section of the viſual Rays of the firſt and loweſt Cloud, on the perpendicular *A N*, being found between the Points *M A*, and that of the ſecond and higher Cloud, between the Points *M N*, which is below *A M*. It may likewiſe happen, by an effect of the Aerial Perſpective, that of two Clouds, the one whereof is illumined by the Sun, at his riſing or ſetting, the other at the ſame time remaining obſcure and unillumined, the latter, though really the loweſt, and the neareſt, ſhall yet appear both the remoteſt, and the higheſt.

Suppoſing upon the Wall *B C*, [*Tab.* 2. *Fig.* 10.] I Paint the Figure of a Houſe, to appear at a Miles diſtance; and this done, I diſcover a real Houſe, actually removed to that diſtance: theſe two Houſes, I diſpoſe ſo by the ſide of each other, as that the Sections of the Line *A C*, made by each Piramid of viſual Rays, be equal; and yet after all, viewing theſe two Houſes with both Eyes, they neither appear equally big, nor equally diſtant.

A Painted Figure will not appear at an equal diſtance with the Natural Object, though both ſeen under the ſame Angle.

The thing principally to be conſidered, in order to give a *Relievo* to Painting, is the *Ground*:

Of the Grounds in Paintings.

Ground: In which, it may be observed, that the Terms or Extremes of Bodies which have convex Surfaces, will usually show themselves, even though both the Body and the *Ground* have the same Colour. Now the reason of this is, that the convex Terms, or *Contours* of Bodies do seldom receive their Light in the same manner as their *Ground*, even when the same Light is found to illumine them both; so that the *Contours* become frequently either brighter, or more obscure than the *Ground* on which they are seen: But shou'd it happen, that a *Contour* besides having the same Colour, shou'd likewise be illumined, or obscured in the same Degree, with its *Ground*; in that case, the *Contour* must inevitably be lost, and the Figure remain indistinguishable. 'Tis for this reason, that a Painter can never be too cautious in his *Grounds*; nor ever avoid this uniformity of Lights and Colours with too much Study: For, as 'tis his chief aim, to show his Figures rais'd, and advanced from the *Ground* of his Painting, and as this Practice is found to have a quite contrary effect, to give into it, wou'd be to frustrate his Endeavours, and to defeat himself of his end.

How to judge of a Painting.

The first things you are to consider in a Painting, are, whether the Figures have a *Relievo* answerable to the place wherein they are found, and to the Light which they receive, and whether the Shadows are not the same in the Extremes, and in the Middles of *Groups*; it being one thing to be incompassed on every side with Shadows, and another to be barely shadow'd on a single side. Now a Figure in the middle of a *Group*, is under the first of these circumstances, being hemm'd in with dark Bodies on every Hand; Whereas another in the extreme, is

is ſhared between the Shadow diffuſed from the *Group*, and the Light it receives from its Luminary.

Obſerve ſecondly, whether by the *Ordonnance* or Diſpoſition of the Figure, they appear accommodated to the Subject; and well ſuited to the Hiſtory which they are intended to repreſent.

And thirdly, whether the Figures be attentive to the buſineſs, and to the occaſion of their being there; and whether their *Attitudes*, and Expreſſion, be ſuitable to the matter in hand.

Objects appear with leſs *Relievo* as they are more remote.

An Opake Body will appear to have leſs *Relievo*, as it is further diſtant from the Eye. This is owing to the Air, found between the Eye, and the Opake Body; which being brighter than the Shadow of the ſaid Body, weakens the force, and diminiſhes the obſcurity of that Shadow; tinging it, with its own Light, and adulterating it with its Azure; whence, of courſe the Body loſes its *Relievo*.

Where the *Contours* are the moſt viſible.

The *Contour* of any illumined Member, will appear more obſcure, as the *Ground* on which it is ſeen is more bright; and for the ſame reaſon, it will appear more clear, as its *Ground* is more obſcure: Laſtly, if it be flat, and the *Ground* bright, like to it in Colour, and equal to it in brightneſs, the *Contour* will be inſenſible.

Of the Bounds or Extremes of Bodies.

The Bounds of Bodies are leſs evident, as they are ſeen at a greater diſtance: This is a Maxim that can never be repeated too often; it being the Foundation of a rule of the laſt importance, *viz.* that the *Contours* of Objects muſt be drawn more or leſs ſtrong, as they are more or leſs remote. Now the termination or bound-

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ding of one thing upon another, is in reality no more than a Mathematical Line; not having the Properties of a Physical one: Neither can the Term between two Colours be properly called a Line, the one beginning, where the other ends; without the interposition of any other thing. Learn therefore, never to be too coarse in your *Contours*; but especially where the Objects are supposed at a distance; Nature, which is every where else to be followed, being not here to be departed from.

Of the Shadows of remote Objects.

In representing remote Objects, Observe, never to trace the Precise Bounds of the Shadows; but rather leave them at large, and undetermined. Now, for Representations of this kind, it will be proper to pitch on the Evening, or at least on some cloudy Season; since that, will give you a fair Occasion of leaving your Lights and Shadows undefined, and their Bounds somewhat confused; and will free you from any Necessity of the contrary Practice, which is the more to be avoided, as it is not only difficult to execute, but disagreeable in the effect; the Shadows, in that Case, appearing like so many Spots, or Blotches at a Distance. Remember, likewise, never to paint your Shadows so extremely deep, as that by their Blackness they Absorb, or Drown their original Colour; excepting the Place wherein they are found, be dark and gloomy. Lastly, Observe that the *Contours* be not seen; especially those of the Hair. Nor, let any of your Lights appear of a pure, untainted white; unless where 'tis requisite that the Genuine Colour of some white Object shou'd show it self.

Various Rules and Precepts in Painting.

The Figure, and Bounds of an Object, are never seen distinctly, either in its Lights or Shadows; but 'tis in the intermediate Parts, where

where neither the Light, nor the Shadow are conſiderable, that they are the moſt clearly diſtinguiſh'd.

Perſpective, as it relates to Painting, is divided into three Principal Parts; the firſt of which conſiſts in diminiſhing the Magnitude, or Dimenſions of Bodies, ſuitably to their different Diſtances; the ſecond, conſiders the weakning, or diminution of the Colours of ſuch Bodies; and the third, is that which regards the Bounds or *Contours* of Bodies; teaching how to make them fainter, or more ſenſible, as the Objects are more or leſs remote: it depending on the Eaſe, or Difficulty of tracing the Bounds of Objects, that they appear more or leſs Diſtinct, or more or leſs Diſtant.

The Azure of the Air, is a compound Colour, form'd out of Light and Darkneſs: by Light, I mean, the Particles of Vapours diffuſed through the Air, and illumined by the Sun; and by Darkneſs the pure Air, not charged with any Heterogenous Particles, to receive and reflect the Light of the Sun: An inſtance of this, may be ſeen in the Air, interpoſed between the Eye and a Mountain, darken'd by means of the great Number of Trees wherewith it is beſet, or viewed on that ſide turned from the Sun; for the intermediate Air, will here, be found of two Colours; whereof, that oppoſed to the obſcure part of the Mountain, will be Azure; the other being different; and the more ſo, if the Light part of the Mountain be ſeen covered with Snow.

Among things equally obſcure, and equi-diſtant; that will appear the moſt obſcure which is found on the brighteſt *Ground*; and *Vice verſa*.

That Figure, which shows the greatest share of Black and White, will appear with the greatest Degree of *Relievo*; 'Tis for this Reason, that I would advise the Painter, to cloath his Figures with the brightest and most vivid of his Colours; those which are obscure, being unable, either to give them a *Relievo*, or to make them visible at a Distance: The Reason of which, is, that every Shadow is obscure, either in a greater or less Degree, so that a Drapery, of a dim, obscure *Die* will appear too uniform, and alike in its Lights, and Shadows; whereas, in those, whose Colours are brighter, the Difference between their Lights and Shadows, will be the more evident, and the greater.

Why a Painting though imitated with the greatest perfection from Nature, does not appear with as much *Relievo*, as the Natural Objects whence it is Copied.

A Painting, though conducted with the greatest Art, and finished to the last Perfection, both with regard to its *Contour*, its Lights, its Shadows, and its Colours, will never show a *Relievo*, equal to that of the Natural Objects, unless these be view'd at a Distance, and with a single Eye; as may be thus Demonstrated. Suppose the two Eyes *A B*, viewing the Object *C*, at the Concourse of the two Central Lines, or visual Rays, *A C*, *B C*; [*Tab.* 2. *Fig.* 2.] In this Case, I say, that the Lines, or Sides of the visual Angle including those two Central Lines, will see the space *G D*, beyond, and behind the said Object; and the Eye *A* will see the Space *F D*, and the Eye *B*, the Space *G E*; so that the two Eyes will see, behind the Object *C*, the whole Space *F E*. By which Means that Object, *C*, becomes, as it were, transparent, according to the usual Definition of Transparency, which is that, beyond which, nothing is hidden. Now, this can never happen where the Object is only viewed with a single Eye; and where that Eye, is

Tab. II. *To fold out fronting page 178*

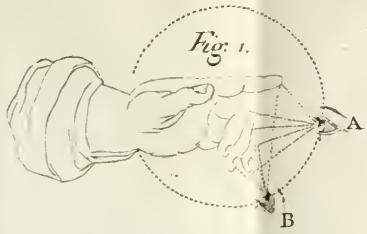


Fig. 1.

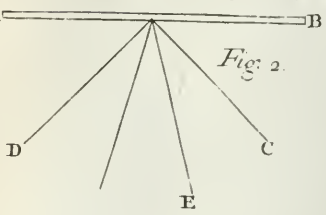


Fig. 2.

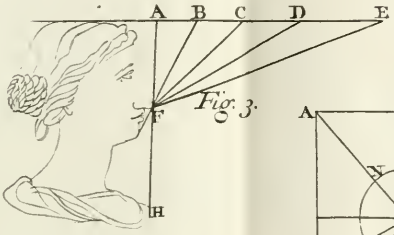


Fig. 3.

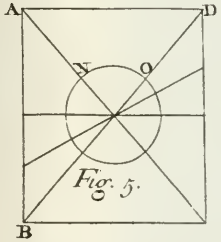


Fig. 5.

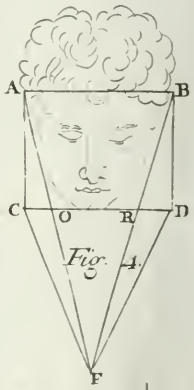
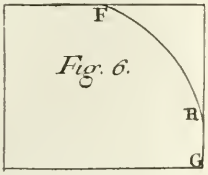


Fig. 4.



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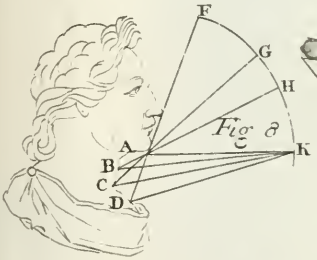

Fig. 8.

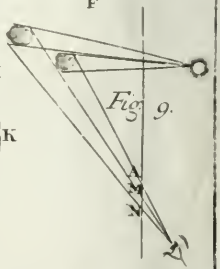

Fig. 9.

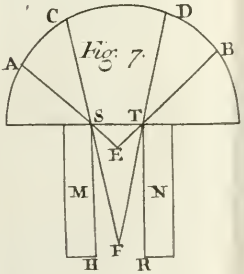

Fig. 7.

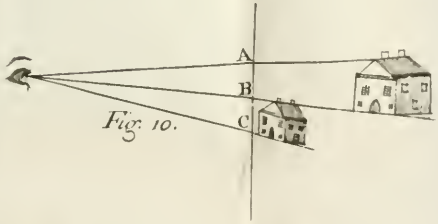

Fig. 10.

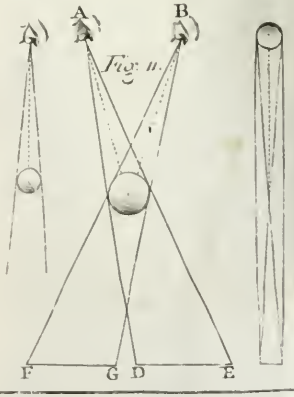

Fig. 11.

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is leſs in Extent than the Object which it views; whence, the Truth of our Propoſition is fairly evinced; A painted Figure intercepting the whole ſpace behind it; ſo that the Eye is precluded from the ſight of any part of the *Ground*, found behind the Circumference of that Figure.

A Light Ground preferable to a Dark one with regard to Figures placed at the bottom of the Painting.

Figures Painted on a bright and illumined *Ground*, will appear with a greater *Relievo* than if Painted on a *Ground* more obſcure: The reaſon is, that in order to give your Figure the greater force and freedom, you make that part of it, which is the furtheſt removed from the Light, the leaſt illumined by it; whence it becomes obſcure; ſo that coming to terminate on an obſcure *Ground*, its extremes are render'd dim, and appear confuſed, and of a Piece with the *Ground* it ſelf: Inſomuch that without the aſſiſtance of ſome *Reflex*, to be conducted thither, your work will remain devoid, both of Spirit and Grace; nor will any part of it, excepting its Lights, be ſo much as ſeen, at a diſtance. And this is the effect of an obſcure *Ground*; which prevents the *Relievo* of Figures, cutting off, and mutilating them of all their unillumined parts.

An univerſal Light more advantageous to a Figure than a particular one.

A Figure expoſed to an univerſal Light, will appear more graceful, than if illumined by a particular one; the reaſon is, that a large and ſtrong Light, incompaſſes, and (as it were) embraces the *Relievo's* of Bodies; ſo that the Figures illumined thereby, will appear with force and freedom, and will even preſerve themſelves at a conſiderable diſtance: Whereas thoſe ſuppoſed in a Chamber, or illumined by any other little, and narrow Light, will receive very large as well as very deep Shadows: And Paintings

that are ſhadowed in this manner, never make any other appearance at a diſtance, than that of a dim, tinged, and flat Surface.

In Painting a Landskip regard to be had to the Climate and the Quality of the Place.

Obſerve, that in repreſenting any place near the Sea, or in a Southern Clime, you never ſhow the Trees, or the Fields in a Winter Piece, the ſame as they are ſeen in Countries more remote from the Sea, and advanced towards the North; excepting ſuch Trees as preſerve their Verdure all the Year, and which are continually ſending out new Leaves.

What is to be obſerved in repreſenting the Autumn

In an Autumn-Piece, let every thing be repreſented ſuitably to the Seaſon. Thus towards the beginning of that Quarter, let the Leaves, found on the oldeſt Branches of Trees, begin to appear pale, and in a greater or leſs Degree, as the Soil is more barren or fertile; ſtill avoiding the common Fault of Painters, who make no ſcruple of giving the ſame Colour, and the ſame kind of Verdure to all ſorts of Trees, provided they be but view'd from equal diſtances. The ſame thing muſt be underſtood of Meadows, Rocks, Trunks of Trees, and of all kinds of Vegetables; wherein you muſt always introduce a variety, in imitation of Nature, who in this, as in other parts of her Kingdom, diverſifies her Works, in a manner that ſurpaſſes all imagination.

A rule to be obſerved in repreſenting the Wind.

In repreſenting the Wind, beſides bending the Boughs of Trees, and turning back their Leaves towards the ſide, whither the Wind blows, obſerve that the Duſt be rais'd aloft, and confuſedly blended with the Air.

How to repreſent the beginning of a Shower.

A Shower in falling, darkens the Air, and gives it a precarious Tincture; being found to receive the Light of the Sun on the one ſide, and being ſhadow'd on the ſide oppoſite thereto,

as

as is obſerved in Clouds; the Earth becomes overſpread with a Dusk, or Gloom, its Light being intercepted by the deſcending Shower: Objects ſeen through it, will appear obſcure, and indiſtinguiſhible, thoſe near at hand, being, however, the moſt evident and diſtinct; and it muſt be obſerved, that ſuch as are found on the ſhadow'd ſide of the Shower, will be more conſpicuous than thoſe on the ſide illumined; the reaſon of which is, that the former loſe nothing but their Principal Lights, whereas the latter, loſe not only their Lights, but their Shadows too; their illumined parts being confuſed with the brightneſs of the Air, and the ſhadow'd parts, likewiſe, illumined and weaken'd, by means of the ſaid enlighten'd Air.

Of the Shadows of Bridges thrown on the Water underneath them.

The Shadow of a Bridge, can never be ſeen on the Water running underneath it, unleſs that Water have firſt loſt its tranſparency, by being troubled and muddy; The reaſon is, that clear Water having a bright and poliſh'd Surface, the Image of the Bridge caſt on it, is reflected back to all parts, placed at equal Angles, between the Eye and the Body of the Bridge; and even under the Arches, where the Shadow of the Bridge ſhou'd be caſt, inſtead thereof is exhibited the Image of the Air; which can never happen when the Water is foul and turbid; ſince its Luſtre, and Tranſparency, to which it owes, that is, it has the effect of a Mirrour, are in that caſe deſtroy'd; whence it becomes diſpoſed to receive a Shadow, in the ſame manner as a Duſty Street.

Of the uſe of Perſpective in Painting.

Perſpective is the Rule of Painting; the bigneſs of a Painted Figure, ought to diſcover the diſtance at which it is ſeen: And where a Fi-

gure appears as big as the Life, it will show it self to be near the Eye.

Of the *Equilibrium* of Figures.

The Navel is always found in the Central Line of the Stomach, which is over it, and is affected in the same manner by a Foreign or Accidental Weight, as with the Natural Weight of its own Body: This is seen in stretching out the Arm, where the Hand at its extreme, has the effect of a Weight at the end of a Stilyard; so that to preserve the Equipoise, it becomes necessary to throw so much of the Natural Weight of the Body, on the other side of the Navel, as is equivalent to the accessary Weight of the extended Arm and its Hand: To which end it is frequently found necessary to raise the Heel of that side, and to keep it suspended from the Ground.

How to make a Statue.

To make a Figure in Marble, in the first place, form a Model of it in Clay; and when that is finished and dry, place it in a Coffin, large enough to contain the Block of Marble, whereon you intend to work. This Coffin having its sides perforated in several places, you must provide little White Rods, such as will enter precisely within those Perforations; push these through the several Holes, till they come to touch the several parts of the Model, opposite to them; and distinguish so much of the Rods, as remains without the Coffin, with Black, giving each Rod and its respective Hole, some particular mark that you may be enabled, on occasion, to match them again: This done, take your Clay Model out of its Coffin, and bestow the Block of Marble in its place, striking so much off it, and bringing it so far down, till such time as all your Rods enter through their Holes, to their former depth, and hide their White

White parts within the Coffin: In order to do which with the more conveniency, let your Coffin be ſo contrived, as that it may be drawn up, and ſuſpended; the Bottom all the while remaining firm under the Marble; thus your Tools will be the more manageable, and you may cut off as much as you pleaſe, with eaſe and expedition.

How to ſecure a Painting from decay and to preſerve it always freſh and unfaded.

Having drawn your *Deſign* on a Sheet of fine Paper, well ſtretch'd in a Frame, lay over it a Skin of Pitch and fine Brick-duſt, well incorporated together, covering this again, with a Lay of Spaniſh White and Maſticot: This done, proceed to Colour your *Deſign*; and laſtly to Varniſh it, uſing to this Purpoſe, ſome old Oyl, clear and defecate, but of a good Body: After which, there remains nothing, but to ſtick it to a Glaſs; which muſt be flat and very ſmooth. 'Twill however, be the better way, to take a ſquare piece of Earth well vitrified, laying over it the mixture of White and Maſticot; afterwards Painting it, applying the Varniſh, and covering it with a Chryſtal; but firſt it will be neceſſary, that your Painting be well dried in a Stove, after which you may Varniſh it with Nut-Oyl and Amber, or barely with Nut-Oil, taking care that it be well purified, and thicken'd in the Sun *.

How to apply Colours upon Linnen.

To Paint upon Linnen, take the following Method: in the firſt place, ſtretch the Piece of Linnen intended for your Painting, on a Frame, and waſh it ſlightly over with Size,

* *N. B.* The Art of Painting in *Enamel*, invented not long ago, refers very naturally to this Head; and as it is now managed, is preferable to that here diſcribed by the Author.

which being thoroughly dried, lay on your Colours with little Brushes, made of Hog's Bristles; and at the same time, while it is fresh, trace out your Shadows: The *Carnations* must be formed of Spanish White, Lake and Masticot; and the Shadows, of Black and Umber, with a little mixture of Lake. After you have gone slightly over the several parts of your Painting, let it dry; which done, touch it over again with Lake, that has been steep'd a long time in Gum Water; this being the fitter for the purpose, because it does not bear any Lustre when used. To make your Shadows the deeper, take some of this Gumm'd Lake, and mix it with Ink; now this will be a Tincture of very good use, since being transparent, it will serve to shadow several very different Colours, as Lake, Azure, Vermillion, *&c.*

Of the use of Perspective in representing Objects that appear dim either on account of distance or of the denstity of the *Medium.*

When on any occasion, you find your self unable to discover any difference, in the brightness of the Lights, or in the obscurity of the Shadows of an Object, that you wou'd imitate, in that case, you may set aside the Perspective of Colours, and only make use of the Lineal Perspective, to diminish the Figures in proportion to their distances; and of the Aerial Perspective, to diminish and weaken their evidency, by showing them less finished, and distinct.

The Eye will never discover the interval between two Objects, differently distant, by means of the mere Lineal Perspective; unless further aided by the Reasoning deduced from the Aerial Perspective.

The effect of the distance of Objects.

That part of an Object which is nearest the Luminous Body, whence it has its Light, will be the most strongly illumined.

The

The Images of Objects, loſe a Degree of force, at every Degree of diſtance; that is, in proportion as an Object is ſeen more remote, its Species is more intercepted in its Paſſage through the Air, and it ſtrikes the Eye with leſs Vigour.

Obſerve that the weakening and alteration of the Colours of Objects, be equal to the diminution of their Magnitudes.

Of the *Medium* between the Eye and its Object.

By how much a tranſparent *Medium* found between the Eye, and its Object, is more ſpacious, and its interpoſition greater, by ſo much the more will the natural Colour of the Object, be transformed into that of its *Medium*.

When an Object is ſo diſpoſed between the Eye and the Light, as that it is found in the Central Line, paſſing between the Centres of the Light, and of the Eye; that Object muſt remain entirely dark, and devoid of Light.

Of the Draperies where with Figures are Cloath'd.

The Draperies wherewith your Figures are Cloath'd, ought to be ſo diſpoſed around the Members which they cover, as that there be no Folds or Plaits with obſcure Shadows, found on any of the illumined parts of the Figures; nor any Folds that receive too bright and glaring Lights, ſeen on thoſe parts of the Figure that are ſhadowed: And further, let both the *Contours*, and Folds of the Drapery, be ſo managed, as that in ſome places, they may follow, and fall in with the natural ſhape of the parts, which they cover; ſtill avoiding any of thoſe unnatural *Contours*, which ſeem to cut and enter within the quick of the Members, with Shadows that are too deep, and indented too far, for the Surface of the Body. Let the Drapery be ſo accommodated, as that it may not appear a Garment without a Body; that is, a heap of Stuffs or Cloaths put off, and out of uſe; a Fault

Fault too common among the Painters, who are so taken with a great deal of Drapery, thrown into a great many Folds, and Plaits, that forgetting the proper use of Cloaths, which is to cover the parts of the Body decently, and with Grace, they load their Figures instead of dressing them; and make the Members appear like so many Bladders, bloated and blown up, in the parts that have *Relievo:* Thus making them an easy Prey to the next high Wind that blows. Now the Folds of Drapery are not to be disused, but to be better regulated; being both necessary, and of good effect, provided they be conducted with Discretion, and judiciously accommodated to those parts of the Figure, where the Members, on account of their Action, or of the *Attitude* of the whole Body, amass, and gather the parts of the Drapery together. Above all, observe, that in Histories, or in Pieces consisting of several Figures, you show a variety in the Draperies; so that if the Folds of some, appear gross and stiff, as if the Cloth were thick and stubborn, let the Folds of others, sit closer and more neatly, as consisting of a finer Thread; the sides and edges of the one, being straighter, and those of the other more indented.

Of the different ways of representing the Folds in Drapery.

Most Painters chuse to show their Draperies, much ruffled, their Turns and Angles very sudden and acute; others take a softer course, and make their Angles almost insensible; and others use no Angles at all, contenting themselves with little Cavities, or sinkings in.

How to conduct the Folds of a Drapery.

That part of a Fold, which is the most remote from its Centre, or from the place of its restraint, whence the Fold commences, will recover more of its natural State, than any other part.

A
B
C

part. This is owing to a Faculty, which all natural things are found to have, in common with each other, to wit ſelf Preſervation, or an endeavour to preſerve their own Manners of being; in conſequence of which, a ſtuff uniform and alike in its thickneſs, and ſtrength, endeavours to continue flat and even; ſo that when on account of ſome Fold or Plait, it is forced to quit its natural Habitude, it ſtruggles continually to retrieve it ſelf; and ſtill in proportion as it recedes from the place of its conſtraint, it approaches nearer to its Original plainneſs, by expanding and unfolding it ſelf. Thus for inſtance, ſuppoſe *A B C* the Fold of a Drapery, and *A B* the place where it receives its force or conſtriction, I have already ſhewn that the part moſt remote from the riſe or root of a Fold, will have recovered the greateſt ſhare of its natural Form; whence it follows, that *C* being the moſt diſtant part of the Fold, will likewiſe be wider, plainer, and more expanded than any other part.

Never let your Drapery be too much diſordered and embaraſſed with Folds: On the contrary, let theſe only be ſeen in ſuch places, as are drawn, or held back, by the Hands and Arms; letting the reſt hang at large, or fall naturally and unconſtrained. Now the beſt courſe you can here take, will be to Copy from Natural; thus for inſtance, if it be a Woollen Drapery that you wou'd repreſent, *deſign* its Folds from a ſtuff of the ſame kind; ſo if you wou'd have it appear of Silk, or ſome other fine ſtuff, or even of a coarſe Country Kerſey for your Clowns to appear in, obſerve the ſame rule; and diverſifie every one, by the Form and Manner of its Folds; declining the ordinary Practice

Rules for *deſigning* a Drapery.

Practice of Painters in this respect, who use to *design* their Draperies from Models covered with Paper or thin Skins; a Method in which they lie extremely lyable to be imposed upon.

Of the Folds seen in the Draperies of Members that are shorten'd.

Where a Figure is shortened, let the Folds be closer together, and drawn round the Member in greater numbers, than where it is not shortened; thus the Eye being placed in *E*, the Figure *M N* throws the middle of each circulating Fold, further from its extreme, as it is more remote from the Eye; *N O* shows the extremes almost straight, being found directly over against the Eye; and *P Q* has an effect quite contrary to the first, *N M*.

Of the Shadows of the Folds.

The Shadowes found within the Folds of the Drapery, will be the more obscure, as the Cavity or Indenture where the Shadow is produced, is more directly opposed to the Eye which views it: With this Limitation, however, that the Situation of the Eye, be between the illumined, and the shadow'd part of the Figure.

The Folds of the Drapery to Correspond to the *Attitude* of the Figure.

In whatever Action your Figures are engaged, let their Draperies be seen in a Disposition Correspondent; still making the Folds, and *Contours* conspire together, and accommodating these so perfectly to the Posture, as that there be no room for doubt, or uncertainty, with regard to the real *Attitude* of the Figure. And take especial care, that none of the Folds be too deep, nor appear to reach below the Surface of the Body. Lastly, whenever you represent a Figure drest with several Garments, one over another, take care, that it do not appear as if there were a Skeleton, so dress'd: But let the Bigness of the whole Figure, be so proportion'd, as that besides the Thickness of the se-

front. p. 188.

front. p. 189.

ſeveral Garments, there appear a Body of a reaſonable Bulk, underneath.

The Folds of the Drapery, wherewith any Member is covered, ought to fall off, and diminiſh, towards the extremes of the part which they encompaſs

The Length of thoſe Folds, which ſet the cloſeſt to the Body, muſt be ſeen wrinkled on that ſide, whereon any Member bends, and is ſhortened; and diſtended on the ſide oppoſite.

From the ſixth Propoſition, of our Treatiſe of Perſpective, it appears, that the Horizon will be ſeen exhibited, as in a Mirrour, on that ſide of a Water, oppoſite to the Horizon and to the Eye. An inſtance of this, you have in the adjacent Figure, where the Horizon *F* is oppoſed to the ſide *B C*, and that ſide, at the ſame time, oppoſed to the Eye. Let the Painter therefore, who wou'd repreſent any wide extent of Water, conſider that this Element has no other Colour, whether bright or obſcure, but what it receives from the brightneſs or obſcurity of the place, wherein it is found; intermingled with the Colours of ſuch other Objects, as it is incompaſſed withal.

Of the Horizon appearing in the Water.

ERRATA.

PAge 13. Line 22. for Treaties. read Treatiſes, p. 26. l. 1. for Vellom r. Velvet p. 40. (in the Marg.) for, form the Life, r. from the Life, p. 69. l. 27. for theſe, r. that p. 112. l. 30. for orher. r. other, p. 141. (in the Marg.) for Colours r. Contours, p. 154. l. 29. for Gaound, r. Ground, p. 158. l. 4. for firmer, r. former. p. 157. l. 30. for *O N*, r. and *N*, p. 158. l. 25. for a light one, r. a heavy one.

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